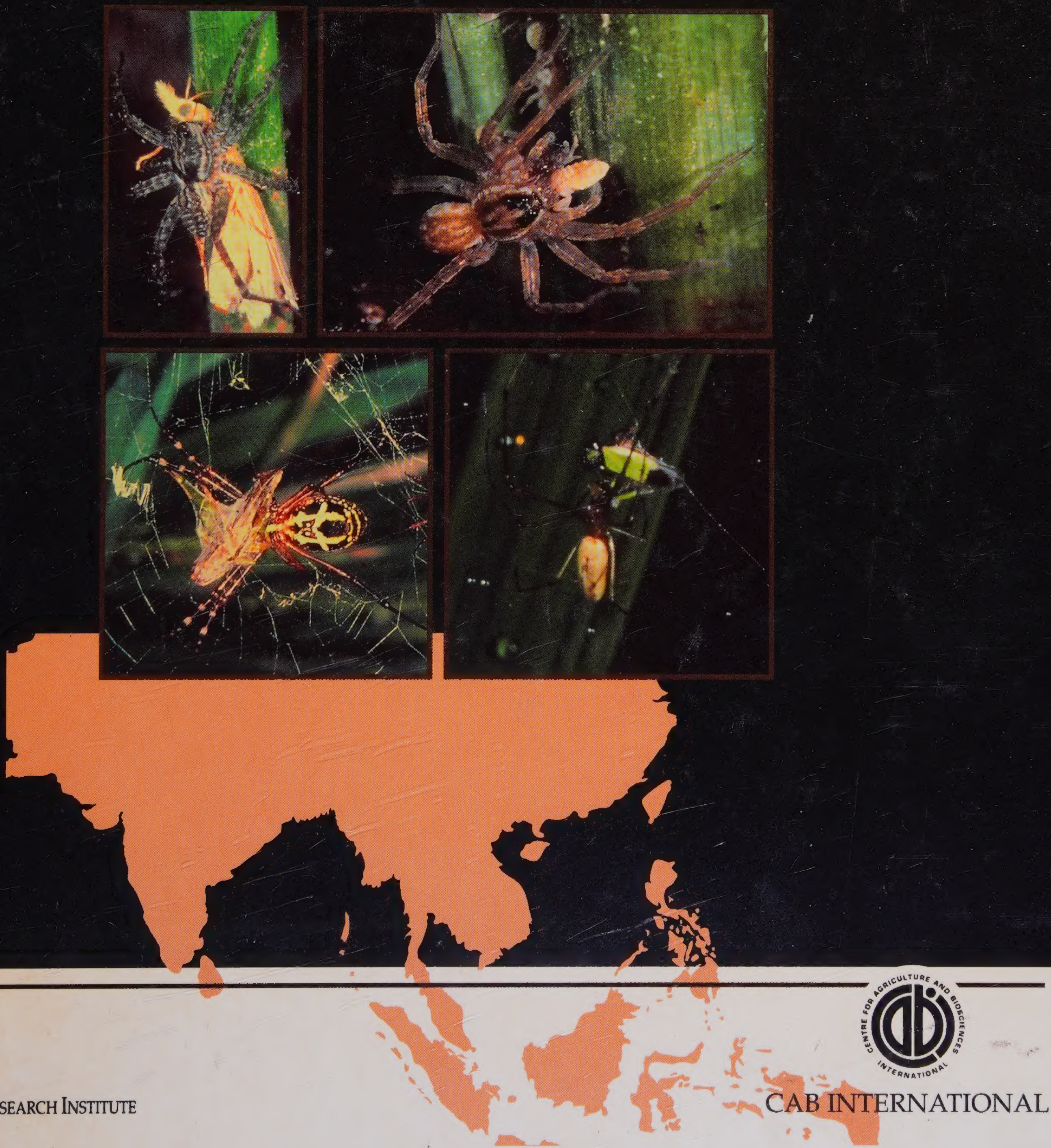
RICELAND SPIDERS OF SOUTH AND SOUTHEAST ASIA

A T Barrion & J A Litsinger



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Riceland Spiders of South and Southeast Asia

Cover photographs

Top left: *Pardosa pseudoannulata* (Boesenberg and Strand) feeding on a moth.
Top right: *Pardosa pseudoannulata* spiderling preying on brown planthopper, *Nilaparvata lugens* (Stål).
Bottom left: *Argiope catenulata* (Doleschall) female on a web with wrapped prey, *Oxya hyla intricata* Stål.
Bottom right: Spiderling of *Tetragnatha maxillosa* Thorell preying on green leafhopper *Nephotettix virescens* (Distant).

Riceland Spiders
of South and Southeast Asia

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Abstract

The riceland spiders of South and Southeast Asia with emphasis on the Philippines are described and illustrated. A total of 342 species belonging to 131 genera under 26 families are recognized. Of these, 258 species and eight genera are new to science – Theraphosidae (one genus and species), Barychelidae (one species), Uloboridae (two species), Dictynidae (one species), Oonopidae (one species), Salticidae (one genus, 28 species), Clubionidae (two genera, 40 species), Gnaphosidae (nine species), Thomisidae (one genus, 32 species), Philodromidae (two species), Eusparassidae (15 species), Mimetidae (three species), Zodariidae (two species), Oxyopidae (seven species), Hahniidae (two species), Pisauridae (five species), Lycosidae (22 species), Theridiidae (two genera, 34 species), Linyphiidae (four species), Theridiosomatidae (one species), Tetragnathidae (six species), Metidae (nine species), and Araneidae (one genus, 31 species). No new species are recorded in families Pholcidae, Scytodidae and Hersiliidae.

The five most dominant families (in terms of species) are Araneidae (60 species), Clubionidae (42), Theridiidae (40), Thomisidae (39) and Salticidae (36) accounting for 63.5% of the entire collection. The moderately abundant families – Lycosidae (27 species), Eusparassidae (16), Metidae (14), Tetragnathidae (13) and Gnaphosidae (10) – shared 23.4%. The rest (13.1%) belongs to the least preponderant families with only nine species or fewer per family.

Keys to the families, genera, and species, including distribution maps for individual species and a classification scheme for Philippine riceland spiders are provided.

Spider diversity (H′) and guild composition in three Philippine rice environments – upland (U), rainfed wetland (RW), and irrigated wetland (I) at two crop stages, 31 and 65 days after seeding (DAS) are compared. Species richness and diversity increased with crop age and the order of rank in decreasing pattern is I > RW > U.

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It is with great pleasure that 'Bert B.' dedicates this piece of work to his wife, Adelina.

I Introduction

Spiders are amongst the most omnipresent and numerous predators in both agricultural and natural ecosystems, averaging 50,000 individuals per acre in vegetated areas (Zahl 1971). They are nature's master spinners of silken webs and highly proficient predators for, in their absence, the insect pest world would run amok, creating havoc for our health and food resources. Unfortunately, spiders are also the most feared and maligned of nature's smaller animals due to the infamy of a few poisonous species such as the black widow *Latrodectus mactans* (Fabricius) with a more potent venom, drop for drop, than poisonous snakes (Gertsch 1979).

Spiders belong to order Araneae, class Arachnida, and are members of the phylum Arthropoda, the largest assemblage of animals with jointed legs and hard exoskeleton. The Araneae comprise animals with only two body regions – a cephalothorax and abdomen. They are eight-legged and have no compound eyes and no wings. Their multitudinous kin comprise the following classes: Insecta (insects), Crustacea (crabs, lobsters, shrimps, barnacles, and water fleas), Chilopoda (centipedes), Diplopoda (millipedes), Symphyla (symphylans), Pauropoda (pauropods), Xiphosura (horseshoe crabs), and Pycnogonida (sea spiders) (Borror *et al.* 1971). Approximately 120,000 species of spiders occur worldwide and only one fourth of the total fauna has been named (Levi and Levi 1968; Dondale 1979; Gertsch 1979; Roberts 1985).

The potential of spiders as natural control agents of arthropod pests (Riechert and Lockley 1984) has aroused interest in learning more about them, viz. their abundance and species composition in different ecological systems (Whitcomb *et al.* 1963; Turnbull 1966; Altieri and Whitcomb 1979 and 1980; Doane and Dondale 1979). The spider fauna of several cultivated crops became well documented in some parts of the world in cotton (Kagan 1943; Whitcomb *et al.* 1963; Whitcomb and Bell 1964; Leigh and Hunter 1969; Dinkins *et al.* 1970; Pamanes-Guerrero 1975; Bishop and Blood 1977; Bishop 1980), soybean (Dumas *et al.* 1974; LeSar and Unzicker 1978), alfalfa (Wheeler 1973), and maize (Plagens 1985), and in citrus orchards (Muma 1975) and deciduous orchards (Dondale 1966). As to rice, spider faunae are rather well known in South and Southeast Asia (Kobayashi 1961; Okuma 1968; Chu and Okuma 1970; Kobayashi and Shibata 1973; Okuma and Wongsiri 1973; Okuma *et al.* 1978; Barrion and Litsinger 1981a,b and 1984). The existing faunistic surveys of spiders in the region are scattered as numerous reports in scientific journals.

Our goal is to provide an illustrated guide that can be used by both specialists and novices to identify Philippine spiders. We provide simplified keys, illustrations, glossary, and a literature guide to give novices the needed tools to develop skills in spider identification. We hope to stimulate greater interest in spiders region-wide, in establishing sound reference collections and in cataloguing and reporting new discoveries of species from poorly sampled agricultural and non-agricultural habitats. The majority of the species treated in this book were collected from a diversity of riceland habitats in the Philippines.

HISTORICAL BACKGROUND

The local study of Philippine spiders has been slow because of the small number of institutions supporting taxonomists and the near absence of Filipino amateurs. With few exceptions, most names of Philippine spiders come from foreign taxonomists who either retained or deposited most type specimens in European museums, principally the Muséum National d'Histoire Naturelle (MNHN) of Paris. It is not surprising that scientific names of common spiders are not known with assurance as Filipino amateur araneologists do not have access to most type specimens. The existing knowledge of Philippine spiders is scattered. We have assembled that knowledge through keys to species beginning at the family level.

To our knowledge, Philippine araneology had its modest beginning in 1841, although Marapao (1965), in the absence of Roewer's (1954) *Katalog der Araneae von 1758–1940*, reported otherwise. Marapao attributed the earliest work on Philippine spiders to a Jesuit priest, Father Casto de Elera, who in 1895 published his *Catalogo Sistematico de Toda la Fauna de Filipinas Conocida Hasta el Presente*. Actually, the study of Philippine spiders was pioneered by C.A. de Walckenaer in 1841 in volume II of his *Histoire Naturelle des Insectes Aptères*, which contained 22 described species of orb-weavers belonging to two genera – *Epeira* (11 species) and *Plectana* (11) – of Araneidae and Tetragnathidae. To date, only 13 of Walckenaer's species remain valid – spread among six genera. Interest in Philippine spiders became torpid for 36 years until Eugene Simon, the most prominent of all European araneologists, revived it in 1877 by publishing *Etudes Arachnologiques 5^e Mémoire Arachnides Recueillis aux Iles Philippines par MM G.A. Baer et Laglaise*. This monumental work contained 27 species in 17 genera and eight families. Five years later, his affection for spiders from the Philippines continued and was highlighted by the collections yielded from the voyage of M. Simon to the Philippines published in 1893. In a span of 26 years (1877–1903), Simon broadened the purview of knowledge about the spider complex present in the Philippines. He described a total of 104 species in 21 families – a contribution that accounted for ca. 50% of those species now known in the Philippines.

Lucas (1863), Thorell (1878, 1881, 1891), Peckham (1892, 1907), de Elera (1895), Cambridge (1897), Dahl (1902, 1914), Fage (1912), Dalmas (1916, 1918a), Chamberlin (1917, 1925), Banks (1930), Strand (1932), and Giltay (1935) dealt with Philippine spiders. Soon after Giltay, there was again a lull in the study of Philippine spiders, for three decades, until 1965 when Marapao, a professor from the University of San Carlos, Cebu City conducted research on the subfamily Argiopinae of Cebu Island. He described a new species *Argiope schoenigi* (= *Argiope appensa* (Walckenaer 1841)) and two new varieties *Metargiope ornatus* var. *turricola* (= *Argiope catenulata* (Doleschall 1859)) and *M. ornatus* var. *lineatus* (= *A. aemula* (Walckenaer 1841)). Two years later, this was followed by Cariaso (1967), a zoology professor from the University of the Philippines at Los Baños. He described the morphology and life history of the black widow spider, *Latrodectus hasselti* (Thorell). Adato (1974) surveyed Philippine orb-weavers. Brignoli (1973a–e, 1974a–k, 1981a–d) added three new species in three families. In 1973, Cutler and Wanless described a salticid *Mantisatta longicauda* and three tetrablemmids were described by Lehtinen (1981) from the Philippines. In the same year, Barrion and Litsinger (1981a) described the spider complex of dryland rice agroecosystems and of the wetlands three years later (Barrion and Litsinger, 1984). It was also in 1981 that preliminary work on the most diverse but equally fascinating group of spiders – the jumping spiders of Mt. Makiling and its vicinity – was done (Amalin 1981). The Philippine spiny-bellied orb-weavers were reported and beautifully illustrated (Adato-Barrion *et al.* 1982). Most recently, the spider predators of the psyllid, *Heteropsylla cubana* Crawford, which devastated *Leucaena leucocephala* (Lam) de Wit – the most important multipurpose tree species in the Philippines and some other countries in the Pacific – were documented (Barrion *et al.* 1987; Villacarlos 1988).

In general, the 1970s and 1980s marked the era of renewed interest in spiders in many parts of the world including the Philippines, not only their taxonomy but also their biology, biocontrol, ecology, and cytology. The unquestionable contribution of spiders in biological control – an important tactic for integrated pest management systems – made this possible.

II *External Anatomy*

Unlike many other arachnids, the body of a spider consists mainly of two regions – the cephalothorax (anterior part) and the abdomen (posterior part) connected by a slender waist structure known as the pedicel. The cephalothorax or prosoma is divided into the cephalus and thorax, the cephalus bearing the eyes, palps, and mouthparts and the thorax the legs, while the abdomen or opisthosoma contains the respiratory openings, reproductive and digestive systems, anal tubercle, and spinnerets (Fig. 1ab).

CEPHALOTHORAX

The cephalothorax (Fig. 1a) is covered dorsally by an unsegmented convex hard shield called the carapace. The carapace usually has a small depression or pit known as the thoracic groove (fovea) and from that pit radiate four shallow furrows (striae) that extend to the carapace margin. The anterior pair of furrows (cervical groove) when present demarcates the U-shaped head outline from the thorax. The region between the anterior eye row and the frontal margin of the carapace is the clypeus. Its height is the distance between the anterior median eyes (AME) and the anterior margin of the carapace expressed in units relative to the width of eyes, usually the AME (viz. 1.25 AME diameter) when present.

EYES

At the front edge of the carapace are the simple eyes, ranging from six to eight in two or three rows. Most spider families retained the primitive number eight, although others have six. Generally, there are four eyes per row. The eyes are of taxonomic importance, viz. relative size, spacing, arrangement or position, and number, in defining not only the largest taxonomic groups (families) but also species. They are denoted as AME, anterior lateral eyes (ALE), posterior median eyes (PME), and posterior lateral eyes (PLE) (Fig. 2a). Collectively, the AME and ALE comprise the anterior eyes (AE) in row 1, while the PME and PLE comprise the posterior eyes (PE) in row 2 (Fig. 2a) except in salticids, where the PME are in row 2 and the PLE in row 3 (Fig. 2b). Likewise, LE are the lateral eyes and ME the median eyes. AER-L is the length of the anterior eyes and PER-L the length of the posterior eyes. The area encircled by the AME and PME is called the median ocular area or quadrangle (MOQ), while in Salticidae, where the eyes are in three rows, the whole region covered by the eyes is termed ocular area and used in a similar way. In the MOQ, anterior width is noted as MOQ-AW, posterior width as MOQ-PW, and length as MOQ-L. MOQ-AW > MOQ-PW means the MOQ is wider in front than behind; the reverse is MOQ-AW < MOQ-PW (Fig. 2ac). Eye curvature, viz. procurved, recurved, or straight,and color are also equally important. The eye row is procurved (Fig. 2c) when the outer ends of the line drawn through the eye row approach the front end of the carapace and recurved (Fig. 2c) when the outer ends are far (opposite situation) (Fig. 2c). If the eyes are all alike they are described as homogeneous (Fig. 2abd), and heterogeneous (Fig. 2c) if they differ in color, viz. light and dark. The AME belong to the first somite of the head and are characterized by having a direct retina, but these are the ones that are absent in species with reduced eye number (Fig. 2d). The rest of the eyes belong to the second somite with an indirect retina.

MOUTHPARTS

The chelicerae (Fig. 3a) are preoral structures situated below the clypeus and termed porrect if projected for-

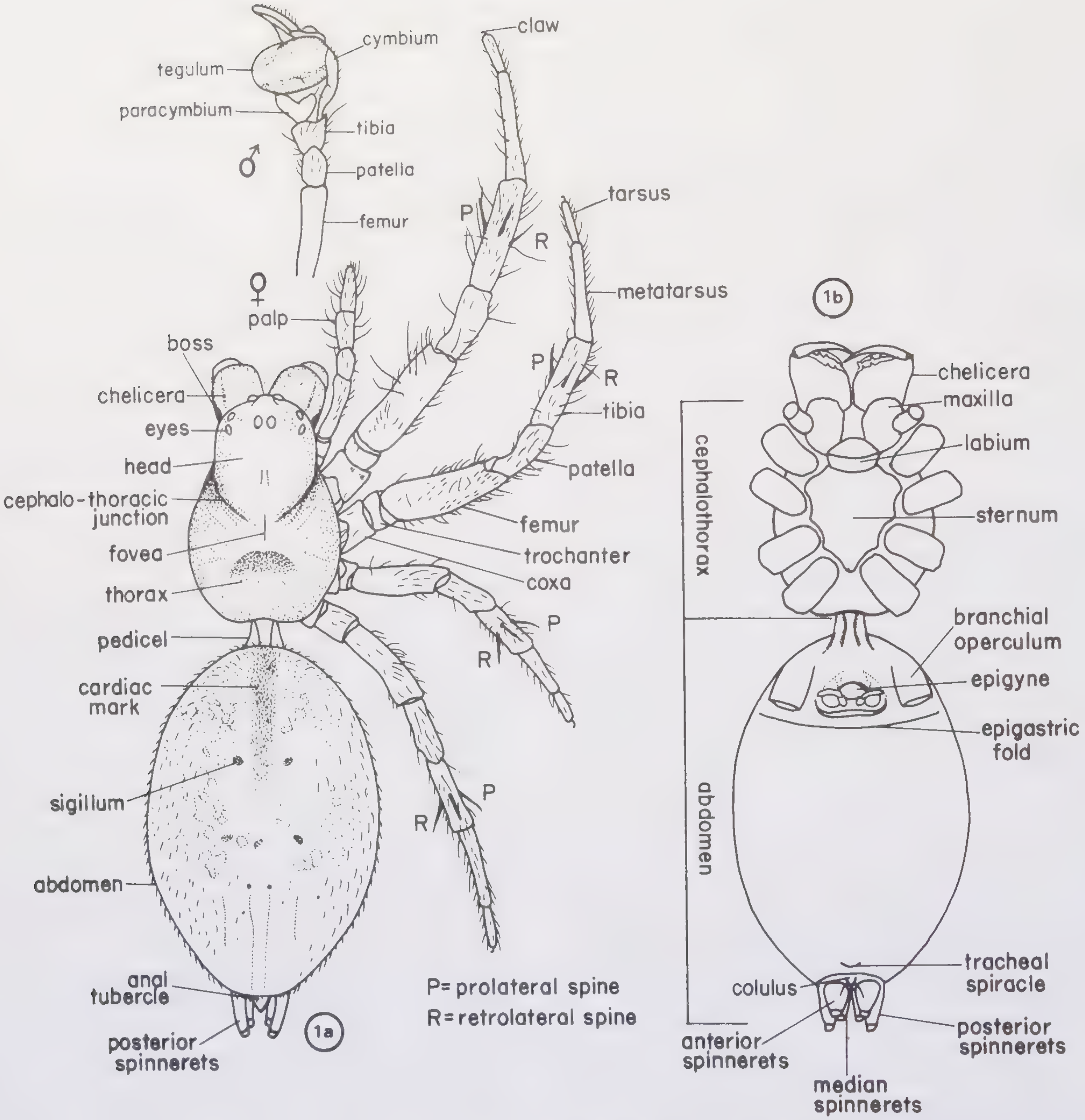
claw
cymbium
tegulum
paracymbium
tibia
♂
patella
femur
tarsus
P
R
metatarsus
♀
palp
1b
boss
P
R
chelicera
tibia
chelicera
maxilla
eyes
head
patella
labium
cephalo-thoracic junction
cephalothorax
sternum
femur
fovea
trochanter
coxa
thorax
pedicel
P
R
branchial operculum
epigyne
cardiac mark
epigastric fold
sigillum
P
R
abdomen
abdomen
tracheal spiracle
anal tubercle
colulus
P= prolateral spine
R= retrolateral spine
posterior spinnerets
1a
posterior spinnerets
anterior spinnerets
posterior spinnerets
median spinnerets

Fig. 1. External morphology of spiders showing the dorsal (a), with female and male pedipalps, and ventral (b) views.

ward or geniculate when the proximal base is stout and they are directed forward for a distance before the main portion bends down vertically. They are used in the capture and killing of prey, courtship and mating display, and defense. Each chelicera consists of a stout basal segment, the paturon, and a slender curved or sickle-shaped apical segment, the fang. The paturon may have a boss or lateral condyle near the base on the outer surface. Near the fang's distal tip is the duct aperture of the poison gland. The fang at rest lies in a groove termed the cheliceral furrow provided with teeth in both outer and inner margins. The outer part represents the promargin and the inner is the retromargin, which is absent in some species. In most spiders, the fang moves in and out in a plane transverse to the longitudinal plane of symmetry of the body and chelicerae, such a condition is said to be diaxial. However, it is paraxial in the primitive and the mygalomorph spiders (trap-door and funnel-web species) where the fang moves up and down in a plane parallel to the longitudinal plane of symmetry of the

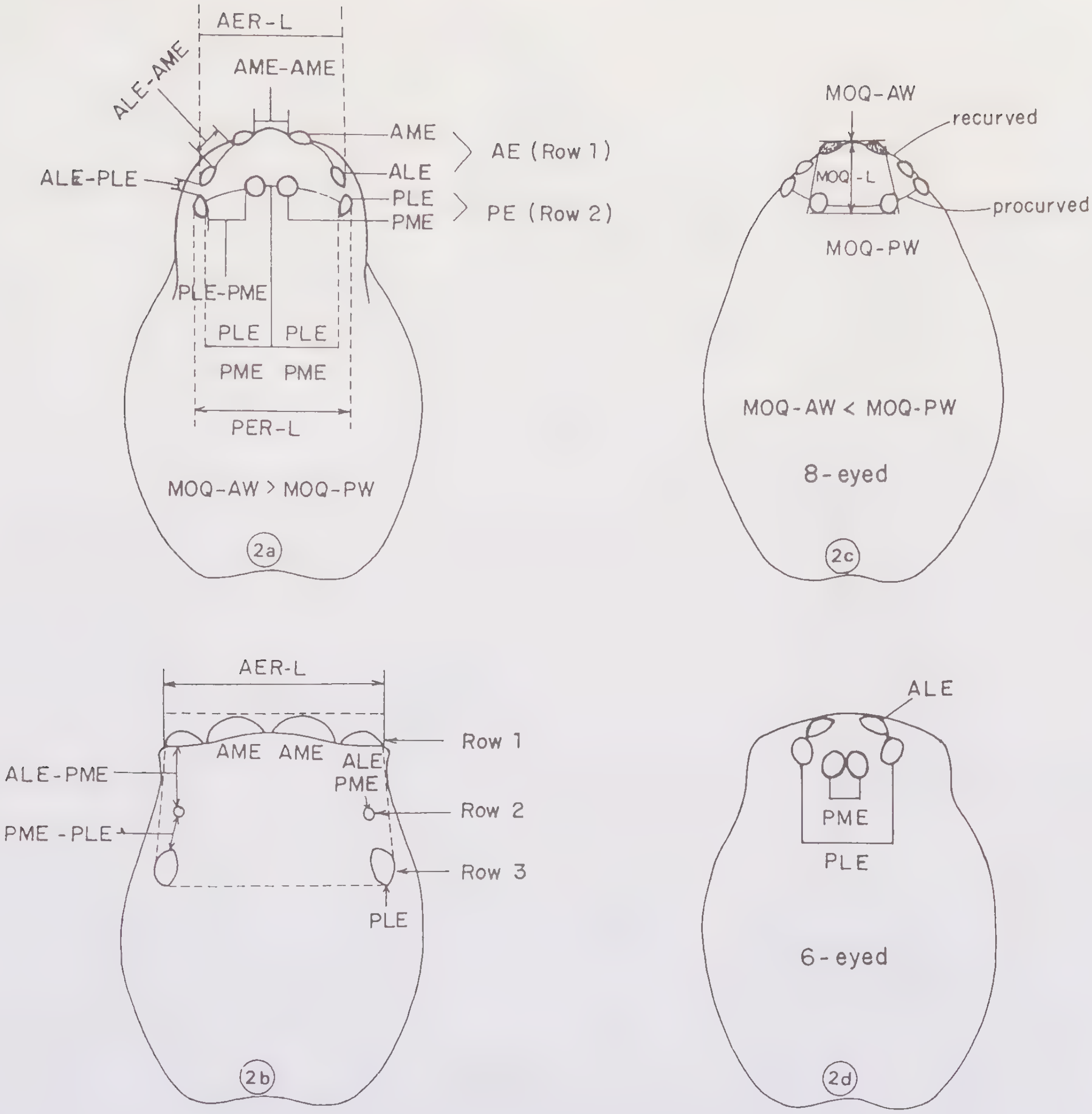
AER-L
AME-AME
ALE-AME
AME
ALE
AE (Row 1)
ALE-PLE
PLE
PME
PE (Row 2)
PLE-PME
PLE PLE
PME PME
PER-L
MOQ-AW > MOQ-PW
2a
MOQ-AW
recurved
MOQ-L
procurved
MOQ-PW
MOQ-AW < MOQ-PW
8-eyed
2c
AER-L
AME AME
ALE
PME
Row 1
ALE-PME
Row 2
PME-PLE
Row 3
PLE
2b
ALE
PME
PLE
6-eyed
2d

Fig. 2. Eye morphology and eye patterns showing eight-eye type (abc) and six-eye type (d).

body and chelicerae. Some spiders have a group of short stout spines, collectively called a rastellum, above the fang base, which is used primarily for burrowing.

PEDIPALPS

The pedipalps (Fig. 3a) represent the second pair of appendages of the cephalothorax, which are leg-like but possess only six segments – coxa, trochanter, femur, patella, tibia, and tarsus. They are often called palps and they differ in male and female spiders (fig. 4a–i). In mature males, the tarsal segment is enlarged, complicated, and modified to form an intromittent organ for transmission of sperm to the reproductive system of the female during mating. It is simple in the female and immature male and comparable to a small leg without a metatarsus. Each tarsus is usually single-clawed.

MAXILLAE

The proximal segment of each palp is the maxilla; the broad and cushion-shaped paired lobes are each furnished with scopulae of long hairs on the anterior and dorsal surfaces along each side of the labium. A row of

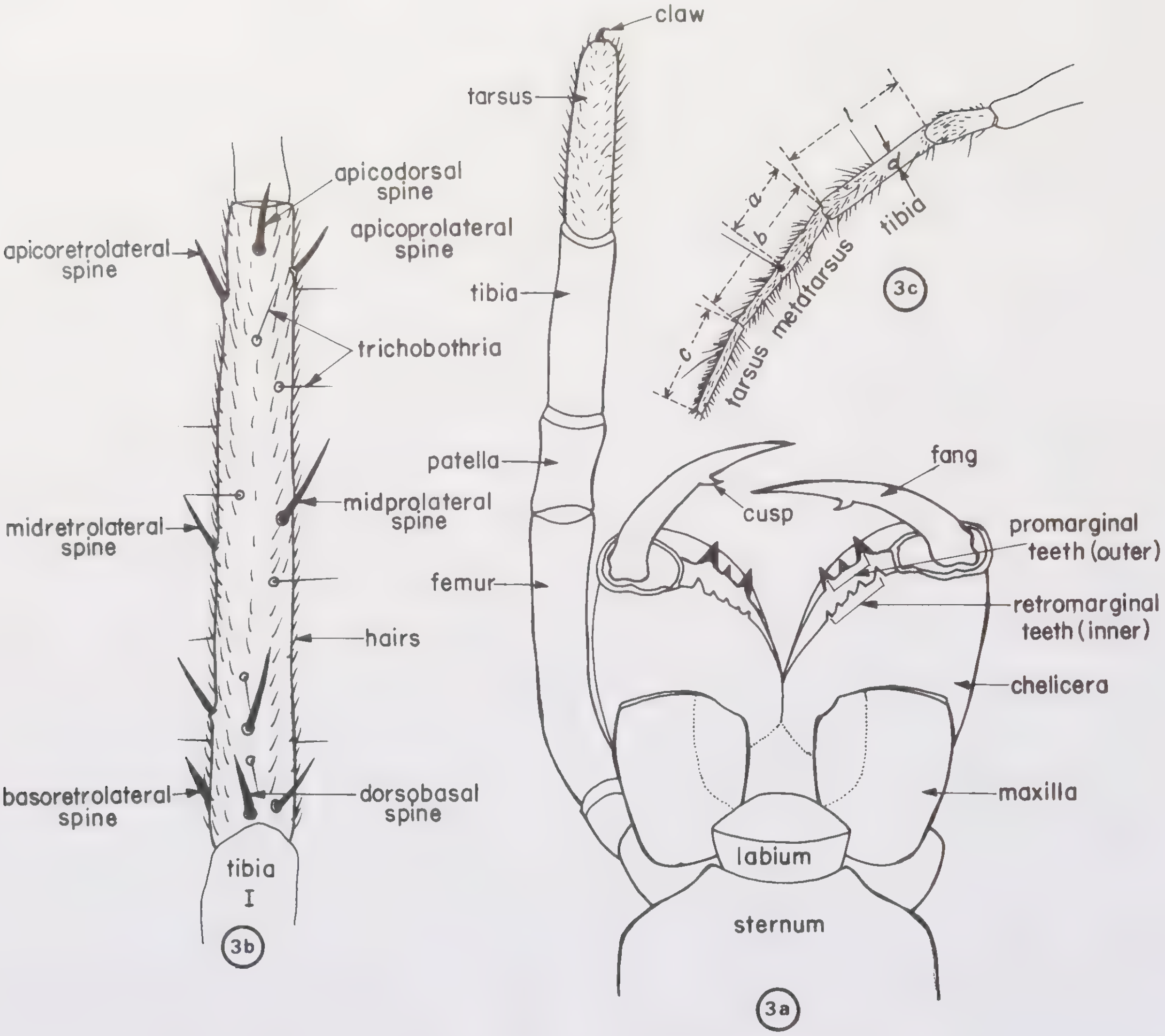
claw
tarsus
apicodorsal spine
apicoprolateral spine
apicoretrolateral spine
tibia
trichobothria
patella
midprolateral spine
midretrolateral spine
femur
hairs
basoretrolateral spine
dorsobasal spine
tibia I
3b
l
d
a
b
c
tibia
metatarsus
tarsus
3c
fang
cusp
promarginal teeth (outer)
retromarginal teeth (inner)
chelicera
maxilla
labium
sternum
3a

Fig. 3. Mouthparts (a); leg components: hairs, trichobothria, and spines and spine positions (b); and leg measurement attributes (c). Note: tibial diameter = d taken at widest width, ratio of metatarsus and tarsus = b/c, and ratio of trichobothria position in metatarsus I = a/b.

Small tooth-like serrula is borne on the distal end of each maxilla (Fig. 3a).

LABIUM

The so-called lower lip underneath the head region dorsad of the sternum is the labium (Fig. 3a). It varies in shape among species, being more or less oval or conical and rebordered. The labium is freely movable in most cases though immobile when fused to the sternum. It is sometimes armed with short blunt spines called cuspules in the mygalomorphs.

STERNUM

The sternum is an oval, shield-like to heart-shaped structure occupying the greater part of the lower surface of the cephalothorax (Fig. 1b). It is sometimes marked with shallow scar-like depressions known as sigilla.

LEGS

All normal spiders bear four pairs of legs (Fig. 1a), designated anterior to posterior as I, II, III, and IV. They are termed prograde if movement is only backward

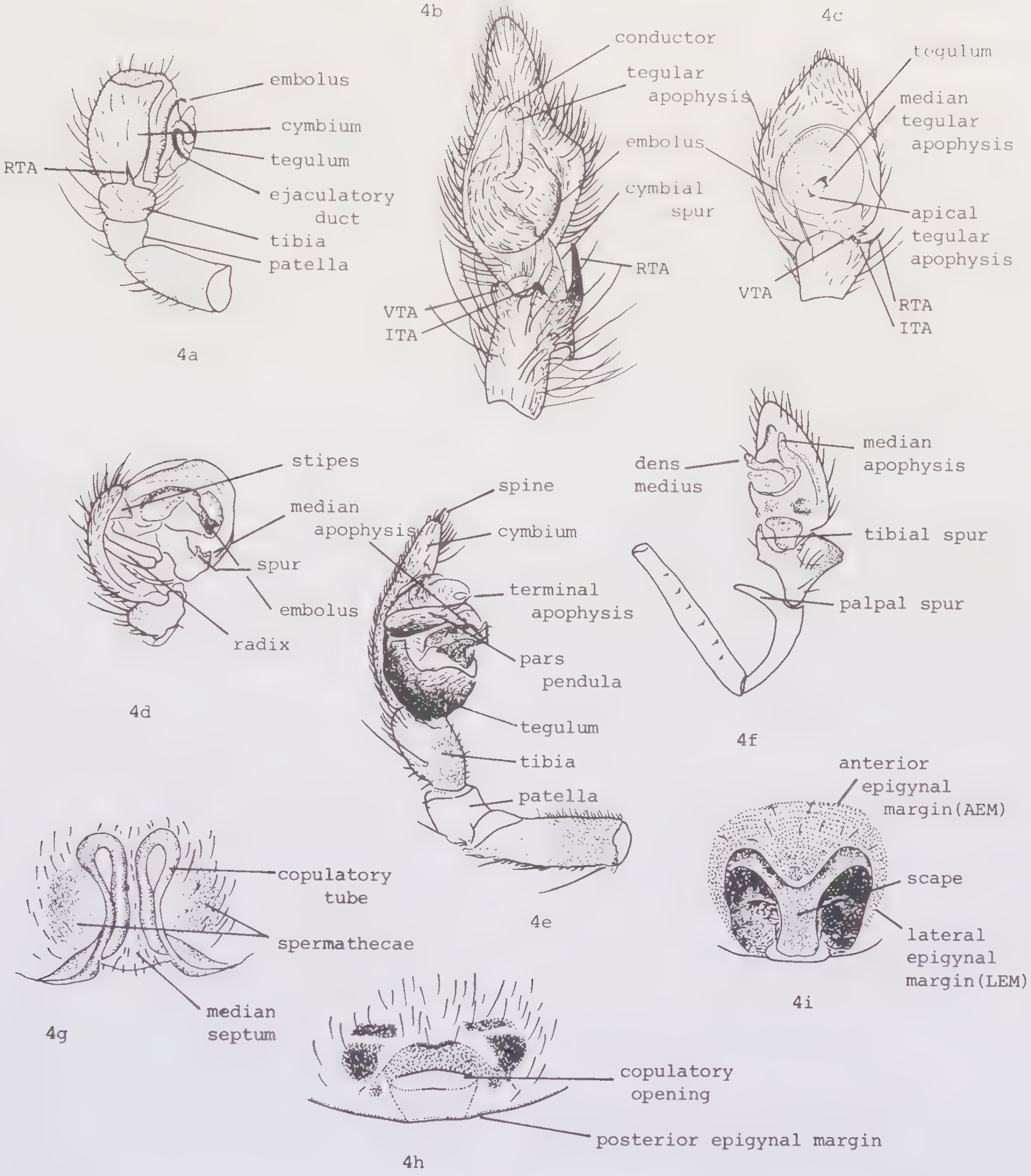
4a
embolus
cymbium
tegulum
RTA
ejaculatory duct
tibia
patella
4b
conductor
tegular apophysis
embolus
cymbial spur
RTA
VTA
ITA
4c
tegulum
median tegular apophysis
apical tegular apophysis
VTA
RTA
ITA
4d
stipes
median apophysis
spur
embolus
radix
4e
spine
cymbium
terminal apophysis
pars pendula
tegulum
tibia
patella
4f
dens medius
median apophysis
tibial spur
palpal spur
4g
copulatory tube
spermathecae
median septum
4h
copulatory opening
posterior epigynal margin
4i
anterior epigynal margin(AEM)
scape
lateral epigynal margin(LEM)

Fig. 4. Morphology of the palpal organ in family Salticidae (a), Clubionidae (b), Thomisidae (c), Araneidae (d), Lycosidae (e), Linyphiidae (f), and the epigynes of Salticidae (g), Clubionidae (h), and Araneidae (i).

or forward and laterigrade if sideways. Each leg is composed of seven segments, namely, coxa, trochanter, femur, patella, tibia, metatarsus, and tarsus. The tarsal segments are either two- or three-clawed, if three-clawed the outer pair is called superior or upper claws and the median pair inferior or lower claws. The claws can be smooth or with file-like teeth. Some species, viz. web spinners, possess auxiliary or accessory claws in the form of stout serrated spines for holding silk threads. Spiders that spin webs or walk on silk threads have three claws. Many hunting species, which do not spin webs, have only two claws, the small claw being replaced by a tuft of hairs. This kind of hair or claw tuft adheres to the water film covering most surfaces, enabling the spider to grip and walk on smooth areas vertically or upside down. The legs (Fig. 4) are usually covered with hairs and a variable number of bristles or setae. Some are stout, rigid, and capable of being erected to serve a defensive function. They are called spines, which in some families are of definite and characteristic arrangement. The length, thickness (particularly in the tibia), and number of spines vary greatly among families. The positions of the spines with all the legs held forward are of four kinds: (i) dorsal (noted as d) representing spine(s) found on top of a leg segment; (ii) ventral (v), located at the bottom; (iii) prolateral (p), directed towards or near the body; and (iv) retrolateral (r), directed away from the body.

Other hairs are thin, long, and delicately slender, arising from small cup-like depressions of certain leg segments and palpi. They are called trichobothria and are believed to be sound receptors; they can be present singly or in rows, straight or curved. A dense brush of hairs occurs in the chelicerae, maxillae, and legs; these are termed scopulae and in some species can be very thick proximal to the tarsi, metatarsi, and palps.

In the Theridiidae, tarsus IV has a serrated ventral row of strong, curved, and toothed setae (hence they are called comb-footed spiders). These are used in flinging the silk over the struggling prey. Spiders with a spinning organ, known as a cribellum, also have a single or double row of curved hairs on the dorsal surface of the hind metatarsi, referred to as a calamistrum. The latter designs the very characteristic web built by cribellate spiders.

The leg formula represents the lengths of each leg in descending order from the longest to the shortest, e.g. 4123. The spination formula, on the other hand, is represented by the notation (d-v-p-r), e.g. 3-6(2-2-2)-0-3. This means that a tibia, say, of leg I has three dorsal (d) spines, six ventral (v) spines with a pair each at the distal, median, and proximal end, none in the prolateral (p) position and three in the retrolateral (r) position.

ABDOMEN

The abdomen (Fig. 1ab) is the posterior region of a spider's body, with remarkable variation in both size and form. It may be soft to entirely hard or provided only with sigilla or scuta. The dorsal surface of the abdomen may have numerous patterns, e.g. a series of chevrons, longitudinal or horizontal stripes, humps, a leaf-like pattern with defined edges called a folium, or sclerotized to form hard plates. Ventrally lie the reproductive and respiratory systems and the spinnerets. The ventral surface immediately posterior to the pedicel is highly chitinized and extends up to the epigastric furrow, this area is known as the epigastrium. Above the midepigastric furrow is the epigynum – the female genital organ. It is, however, absent in mygalomorph spiders. The epigynum is a highly complex chitinized structure and is of extreme taxonomic value, like the male's palpal tarsus (tarsal bulb). The book lungs or lung covers of the first pair of lungs are found above the epigastric furrow on either side of the epigynum. Their openings, called lung slits, are located at the extreme ends of the epigastric furrow. Except for the mygalomorphs, most spiders have one pair of lungs but bear extra respiratory organs (tracheae). Their opening are called tracheal spiracles and are located dorsally to the anterior spinnerets. In Dysderidae and Segestriidae, a pair of tracheal spiracles occurs ventrally to the lung slits. The second pair of book lungs is below each end, proximally, of the epigastric furrow in the mygalomorphs. The spinnerets are located along the posteroventral end of the abdomen in most spiders. However, some species have their spinnerets positioned midventrally. Regardless of location, they are arranged in three pairs: anterior (ventral set), median (center pair), and posterior (dorsal set). The spinnerets extrude the silk threads through tiny spigots. The median pair is often small and usually covered by the anterior and posterior pairs. Certain families of spiders may have an additional spinning organ known as a cribellum, which makes fine flocculent silk; it is found in front of the anterior spinnerets. Spiders with a cribellum also have a calamistrum, on metatarsus IV, which is used to pull and comb out the silk. Other groups have a colulus, a slender or pointed appendage immediately in front of the anterior spinnerets. Dorsad of the posterior spinnerets is the anus with an opening in the anal tubercle.

III Life History

All spiders are dioecious and the females are oviparous. Many species lay eggs enclosed in an egg sac or egg cocoon made of silk, e.g. *Argiope catenulata* (Doleschall), or inside their retreats called egg nests, as in *Clubiona japonicola* (Boesenberg and Strand). The shape of the cocoon depends on the species and may be oval, spherical, fusiform, or bell-shaped. Usually, the cocoons are studded on top with camouflaging plant or soil particles so that they blend well with their surroundings. For instance, the egg cocoons of the common rice-inhabiting long-jawed spiders *Tetragnatha* spp. are all camouflaged and left in the host unguarded. Their camouflage is characteristic of a species and can be used in species diagnosis, but this needs great familiarity with a group. The same is true in the araneid *A. catenulata*, with its egg cocoon left attached in the web or on the plant foliage. Others have no camouflage but are usually guarded, the female spider sitting on top of the egg cocoon, as in the lynx spider *Oxyopes javanus* Thorell, or the female sitting beside the egg sac inside the nest chamber, as in *Araneus inustus* (L. Koch), *Neoscona theisi* (Walck.), *Clubiona japonicola, Chiracanthium* spp. and the crab spiders, *Thomisus* and *Runcinia*. Some are even carried by the mother, this being typical of the lycosids – *Pardosa* (= *Lycosa*) *pseudoannulata* (Boesenberg and Strand), *Pardosa birmanica* Thorell, and *Arctosa janetscheki* Buchar – while the eggs are underneath the abdomen or underneath the cephalothorax in the nursery web spider *Dolomedes* spp.

The inside of each cocoon is divided by a horizontal wall or cover plate into two distinct chambers: the egg chamber and a molting chamber. Thin and rather flat egg cocoons have a small dorsal molting chamber: one of the longer lateral ends of the cocoon is used either as a nest or a molting chamber. The number of eggs in a cocoon varies; usually, bigger spiders have more than small ones. The range is from 15 in *Hyctia* (now *Marpissa*) to ca. 1500 eggs in *Argiope*. Eggs hatch after a span of 3–4½ weeks, thereafter, the young spiderlings leave the egg chamber and stay sedentarily in the more spacious molting chamber for ca. 1–2 weeks. A few days after first molt inside the chamber, the most agile spiderlings cut a circular opening into the cocoon wall and in a few minutes the spiderlings crawl out of the cocoon one after another. Outside, every individual keeps moving, climbing the tallest part of the plant where the egg cocoon was fastened, e.g. rice leaf, spike of grass, etc. Once at the summit, they face the direction of the air current and prepare for ballooning. Prior to take-off, the first pair of legs is stretched forward while the other pairs are attached to the substrate. The latter pairs give the necessary leap for the spiderlings to adventurously discover new frontiers. Others walk continuously, seemingly without a definite direction, and disperse through ballooning following the wind direction.

In the lycosids, however, the female spider cuts the rim of her cocoon with the chelicerae 1–3 days prior to hatching to facilitate the spiderlings' exit from the cocoon. Without such help, the spiderlings would be unable to emerge from the sac. Upon exit, the spiderlings ride on the mother's back clinging to the abdominal dorsum. Some 100–300 tiny spiderlings in several layers remain on the mother lycosid's back for 5–8 days prior to their dispersal, thriving exclusively on their reserve yolk supply. Spiderlings drink 'water' which the mother spider provides by chewing the cocoon held by the chelicerae. In such a crowded ride, a number of spiderlings fall and must survive thereafter on their own.

Generally, the life history of spiders differs according to species. Smaller ones require fewer molts while larger species usually molt more having longer developmental periods to reach sexual maturity.

IV Materials and Methods

COLLECTION SITES

Spiders were collected from 48 locations in 25 provinces throughout the Philippines from 1977 to 1990. Of these, 25 were in Luzon, four in Palawan, ten in the Visayas, and nine in Mindanao. Other collection sites were in Bangladesh (two sites; June to August 1977 and October 27 to November 7, 1984); Indonesia (four sites: August 15-31, 1989); Thailand (two sites: July 24 to August 10, 1989); Vietnam (five sites: August 3-22, 1990), and Cambodia (four sites: October 10-26, 1989). Spiders from rice were also received from India and Malaysia.

SAMPLING TECHNIQUES

To ensure collection of a wide array of spider species from the collection sites, sampling was made using four different techniques (Barrion and Litsinger 1984). In addition, pitfall and malaise traps were set up in some sites. Pitfall traps made of polyvinyl tubes three fourths filled with 10% picric acid were set in site L_4 in 1979, site M_1 in 1983, in L_{16} and L_{17} in 1984-85, and M_4 in 1986 (see Table 1). The pitfall samples were sieved weekly from the trap using a wire strainer with a 38 mm (1.5-inch) mouth diameter and 2 mm mesh diameter. Collected spiders were temporarily kept in 80% alcohol and finally transferred to Oudeman's preservative in the laboratory. Malaise traps were set in ricefields and the grasslands dominated by cogon, *Imperata cylindrica* (L.) Beauv. and *Themeda triandra* Forskal in site M_4 in 1986 and in the weedy fallow adjacent to wetland rice in site L_1 in 1981. Samples were collected daily every afternoon and put directly into Oudeman's preservative along with labels. All pertinent labels - host, type of rice environment, collection site(s), date and methods of collection, and collector(s) - were recorded and incorporated in the vial.

PRESERVATION OF SPECIMENS

Being soft-bodied, spiders cannot be preserved satisfactorily in a dry state, as they shrivel. Therefore Oudeman's preservative was used: 85 parts 70% ethyl alcohol, 5 parts glycerine, and 5 parts glacial acetic acid. Care was taken not to place too many specimens in the preservative and it was changed after 1-2 days, as it becomes diluted with body fluids. The specimens were kept in vials with the same preservative for permanent storage. If other preservatives are not available, 80% alcohol can be used.

PHOTOGRAPHING AND PREPARATION FOR ILLUSTRATIONS

Newly collected specimens were anesthetized with either ether, ethyl acetate, or CO_2 and then posed dry on host plants, viz. rice or other weeds. This was promptly done while the spider was still immobilized with flexible legs and palpi. For morphological examination, most specimens came from the preserved state except when indicated in the description. They were illustrated with the aid of a stereoscopic microscope (50-400× total magnification shown). In order to facilitate the viewing of different angles clearly, the whole spider was stretched either on cotton or white beach sand submerged in the medium. The epigynes were drawn based on natural (uncleared) and cleared conditions. They were carefully removed from the abdomen by lifting the midepigastric furrow using a no. 1 insect pin mounted in a small wooden handle. While at this point, the margins of the epigyne were pricked as close to each other as possible with a minuten needle and prepared as above; when completed the entire shield was detached using fine forceps. The epigynes were cleared in 2.5 cm diameter petri dishes

Table 1. Collection sites with corresponding rice environments (I = irrigated, RW = rainfed wetland, U = upland).

Sites	Type of rice environments
A. PHILIPPINES	
Luzon (L) Island	
L_1 – Calauan, Laguna	I
L_2 – Caliraya, Laguna	U
L_3 – Kalayaan, Laguna	I
L_4 – Liliw, Laguna	I
L_5 – Los Baños, Laguna	I
L_6 – San Pablo, Laguna	I
L_7 – Sta. Maria, Laguna	I
L_8 – Sta. Rosa, Laguna	I
L_9 – Siniloan, Laguna	U
L_{10} – Victoria, Laguna	I
L_{11} – Lian, Batangas	I
L_{12} – Lipa, Batangas	I
L_{13} – Sto. Tomas, Batangas	U
L_{14} – Tanauan, Batangas	U
L_{15} – Alfonso, Cavite	U
L_{16} – Cabanatuan, Nueva Ecija	I
L_{17} – Guimba/Zaragoza, Nueva Ecija	I
L_{18} – Bongabong, Nueva Viscaya	I
L_{19} – Bani, Pangasinan	I
L_{20} – Manaoag, Pangasinan	RW
L_{21} – Anayan, Abra	I
L_{22} – Bangued, Abra	I
L_{23} – Salapadan, Abra	I
L_{24} – Alcala, Cagayan	I
L_{25} – Patapat, Cagayan	I
L_{26} – Solana, Cagayan	RW
L_{27} – Alicia, Isabela	I
L_{28} – Bontoc, Mt. Province	I
L_{29} – Banawe, Ifugao	I
L_{30} – Kiangan, Ifugao	I
L_{31} – Lagawe, Ifugao	I
L_{32} – Real, Quezon	U
L_{33} – Daet, Camarines Norte	I
L_{34} – Iriga, Camarines Sur	I
L_{35} – Naga, Camarines Sur	I
L_{36} – Legaspi, Albay	I
L_{37} – Sorsogon/Matnog, Sorsogon	I
L_{38} – Masinloc, Zambales	RW
Mindoro (MO) Island	
MO_1 – San Jose, Mindoro Oriental	I
Cebu (C) Island	
C_1 – Bogo, Cebu	U
C_2 – Cebu City, Cebu	U
C_3 – Toledo, Cebu	U
Bohol (BO) Island	
BO_1 – Carmen, Bohol	I
Leyte (LY) Island	
LY_1 – Palo, Leyte	I
LY_2 – Baybay, Leyte	I
LY_3 – Maasin, Leyte	I
LY_4 – Ormoc, Leyte	I
Panay (PY) Island	
PY_1 – Dumarao, Capiz	RW
PY_2 – Oton, Iloilo	RW
PY_3 – Pototan, Iloilo	RW
PY_4 – Tigbauan, Capiz	I
Palawan (P) Island	
P_1 – Aborlan, Palawan	RW
P_2 – Batarasa, Palawan	I
P_3 – Brooke's Pt., Palawan	I
P_4 – Iwahig, Palawan	I
P_5 – Narra, Palawan	I
P_6 – Puerto Princesa City, Palawan	U
Mindanao (M) Island	
M_1 – Koronadal, S. Cotabato	I
M_2 – Lake Sebu, S. Cotabato	U
M_3 – Tupi, South Cotabato	U
M_4 – Del Monte, Agusan del Sur	RW
M_5 – Pangantukan, Bukidnon	U
M_6 – Claveria, Misamis Oriental	U
M_7 – Mat-i, Misamis Oriental	U
M_8 – Villanueva, Misamis Oriental	I
M_9 – Betinan, Zamboanga del Sur	U
M_{10} – Margosatubig, Zamboanga del Sur	I
M_{11} – Molave, Zamboanga del Sur	I
M_{12} – Pagadian, Zamboanga del Sur	I
B. BANGLADESH	
B_1 – BRRI, Joydevpur	I
B_2 – Mymensingh	I
C. THAILAND	
C_1 – Prachinburi	I
C_2 – Chanchaensao	I
D. VIETNAM	
V_1 – Plant Protection Research Farm, Hanoi	I
V_2 – Sang Phuong, Hanoi	I
V_3 – Long Dinh, Chau Thanh, Tien Giang	I
V_4 – Cay Lay, Tien Giang	I
V_5 – Ba Ria (Cie Be), Long Thanh, Vung Thau	RW/I
E. CAMBODIA	
CA_1 – Bati, Takeo	I
CA_2 – Kampung Speu, Prey Pdau	I
CA_3 – Prey Veng Barai, Proteach Tlain	I
CA_4 – Ta Saang, Svay Rieng	I
F. INDONESIA	
I_1 – Blabak, Magelang, C. Java	I
I_2 – Soko, Magelang, C. Java	I
I_3 – Kaliurang, Yogyakarta	I
I_4 – Klaten, Yogyakarta	I
I_5 – Wisma Bethesda, Yogyakarta	I
G. BURMA	
B_1 – Mwabi, Rangoon	I
B_2 – Nmawhi, Rangoon	I
H. INDIA	
IN_1 – Madurai, Tamil Nadu	I
I. CHINA	
CH_1 – Canton district, Canton	I

using KOH or NaOH pellets. The number of pellets and duration of clearing varied depending on the size and degree of sclerotization of the epigynum. A less sclerotized epigynum requires 20–28 h with five pellets in 10 ml of water. Harder ones take longer, usually 48–62 h, with the same ratio as above. Clearing can be hastened to within 24–46 h by doubling the pellets to a 1 : 1 ratio. Each dish was provided with data available inside the vial. Male pedipalps were bloated in 3–5 h in a 1 : 1 cold mixture of KOH or NaOH pellets and water.

CLASSIFICATION

The study of Philippine spiders is still in a neonate stage and many new genera and species await discovery particularly from the numerous caves, mountain ranges and forests, and small, fragmented isolated islands not ventured into. While this is true, we proceeded with the writing of this guide and followed a system of classification where the arrangement of higher systematic divisions and families is one of convenience adopted as a practical expedient for utilization. However, we would like to caution the user that the dichotomous key to the families and subsequent generic keys encompassed only adults of South and Southeast Asian species in IRRI's collection, with emphasis on Philippine spiders, and may not apply to continental or world fauna. For the first time, a key to the spiderlings of some 18 species commonly encountered from samples, viz. D-Vac, FARMCOP, yellow pan trap, etc., was developed to aid ecologists, IPM workers, etc. in immature identification. For instance, many new genera described from New Zealand a decade ago had not been reported elsewhere (Forster and Wilton 1968 and 1973; Forster 1970).

MEASUREMENTS

Unless otherwise indicated, all measurements are in millimeters (mm). Body and leg measurements, including trichobothria, were made according to the methods of Locket and Millidge (1951, 1953), Mascord (1970), Heiss and Allen (1986) and Yaginuma (1986a).

1. *Spider length* refers to body length measured from the chelicera to the tip of visible spinnerets.
2. *Eyes.* The spider's eyes are simple ocelli. Most species have eight eyes (the primitive number), arranged in two or three rows. Their sizes, arrangement, diameter, distance between eyes, and length of eye row vary greatly and these features were used extensively in separating taxa. The common eye arrangement is two rows, the first four in front are the anterior eye row (AER) and the other four behind are the posterior eye row (PER). The length of an eye row, e.g. AER-L, refers to the distance or length of the anterior eyes from tip to tip (Fig. 2ab). The same technique applies in taking the length of the PER. The AER consists of two groups: the pair of middle eyes (AME) and the pair of lateral eyes (ALE). The distance between eyes, e.g. AME–AME, means the interspace or separation between the eyes expressed in relation to the AME diameter. Likewise, the posterior eye row has a middle pair (PME) and lateral pair (PLE). The area enclosed by the AME and PME is referred to as the median ocular quadrangle, while in some families, such as the jumping spiders (family Salticidae), where the eyes are in three rows, the entire region occupied by the eyes is called the ocular area and is used in a similar way (Fig. 2b).

Eye rows have two patterns. It is termed procurved if the outer ends of the line drawn along the eye row is nearer to the front end of the carapace and recurved in the opposite direction (Fig. 2c).

The region between the AER and the anterior margin of carapace is the clypeus. The height of the clypeus is the distance between the AER and the anterior margin of carapace expressed in units related to the diameter of the AME.
3. *Legs.* The position of a dorsal tibial spine if considered, was expressed in a similar way to the position of the trichobothrium in the metatarsus; that is, it was expressed as a ratio of a/b, where a is the distance between the spine or trichobothrium and the base of the tibia or metatarsus, respectively, and b is the total length of tibia or metatarsus. The length of a tibial spine is also expressed as a ratio: the length of the spine (l)/the diameter of the tibia at the point of spine insertion (d). Meta I/tar is the ratio of the length of metatarsus I/length of tarsus I (Fig. 3c). The spines on the legs were used in species determination. Four major positions were used in counting spines, namely dorsal (d), ventral (v), prolateral (p), and retrolateral (r). Prolateral spines are nearest the body in legs I and II, and furthest from it in legs III and IV. Retrolateral spines are the reverse. The system of spination is simply coded as dvpr. For instance, dvpr = 0-3-3-5 means that there are no dorsal spines, three each in the ventral and prolateral areas, and five in the retrolateral. Positions of the spines, such as apical, basal, median, and other variations – subapical, sublateral, etc. – are discussed in the species descriptors. For instance, 0-7(3-2-2)-0-2 means seven ventral spines are present, three basal and two each in the middle and apical part.
4. *Reproductive organs.* The length of the pedipalp was taken in both sexes, whenever present. The compositions of the male's pedipalp are presented in Fig. 4a (Salticidae), b (Clubionidae), c (Thomisidae), d (Araneidae), e (Lycosidae) and f (Linyphidae). Similarly, the epigynes of some families are drawn – Salticidae (4g), Clubionidae (4h) and Araneidae (4i).

REARING METHODS

For the life history studies, adult male and female spiders of each of the common rice species presented here were collected from ricefields, border habitats, and fallows, and held in cylindrical plastic canisters 15.4 × 36 cm (6 × 14 in) or mylar film provided with a 35–45 day-old rice plant as a substrate. Some twigs or small bamboo sticks were also added to serve additional substrate. Egg masses and cocoons were cut from the foliage, kept separately by species in 1 × 6 cm glass vials provided with moist cotton wads at the bottom and capped with dry cotton wads. Egg cocoons laid on the inside surfaces of the mylar films were cut too and placed individually in glass vials or in 1.5 × 9 mm plastic petri dishes. Similar provisions were made in this set-up to avoid drying and desiccation of the eggs. Spiderlings that emerged were individually isolated using a camel hair brush in 7.6 × 12.8 cm (3 × 5 in) plastic vials provided inside with freshly cut stems or leaves of rice, partly dried straw or small twigs of any plant available and a nylon mesh window on top. Each mesh was secured by either a tape or rubber band on the mouth of the vial. The vegetation served as substrate for clinging and walking. After first molt, in which almost all stored food (yolk) had been utilized, the spiderlings were fed with a variety of diets: first-instar nymphs of cicadellids and delphacids, Collembola, *Drosophila* flies, *Hydrellia* adults, and chironomids. The food, except Collembola, was partially crushed to help spiderlings feed. Drinking water was provided inside the cell in the form of an inverted film-tube filled with water, the lid of which was pricked with pin no. 3 to allow water to ooze out slowly and wet the layer of cotton on its floor. After two or three molts, each immature of the tetragnathid, *Tetragnatha* spp. was again transferred to a bigger cylindrical cage (12 × 15 in) with two mesh windows and a top vent. Similarly, longer branches of sticks were placed inside each chamber along with a hanging cotton ball wet with water. In addition, an inverted film-tube or plastic vial provided with water as described above was placed on the floor of the rearing cell. It provided an additional source of drinking water as well as cooling the spider. The larger cage provided more space for the *Tetragnatha* to construct a web. A similar rearing methodology was used in *Argiope, Araneus,* and *Neoscona*. The rest – the lycosids, oxyopids, etc. – were reared in smaller cells or tubes (2 × 5 in). The bottom end of each rearing cell plugged with a cotton ball rested on the floor of a rectangular or circular pan lined with wet paper towel. Cut rice stems or leaves and some dry straws were placed inside the tube as additional substrate for the spider. The top end had a nylon mesh secured by rubber bands. As they grew, more and more food had to be added. A diverse diet was continuously provided to the spiders to attain success in molting. These were reared to the adult stage.

For the egg parasitoids, egg cocoons were collected two or three times a week in the field from the ricefields, levees or bunds, weedy fallows, etc. These were individually placed in 2.5 × 9.5 cm glass tubes for parasite emergence. The mouth of the vial was covered by a lid provided with a wire mesh vent (0.25 mm diameter). In the absence of the parasitoids, the hatched spiderlings were used in the life history studies.

V Classification of the Spider Families

There are approximately 34,000 species of different kinds of spiders in the world today (Platnick 1989), and a systematic study of the diversity of all these animals needs a scheme of classification or grouping to properly classify them. The scheme adopted here is based largely on the inferences of several arachnologists, i.e. Dondale and Redner (1978), Heimer and Nentwig (1982), Levi (1983), Platnick (1989), and Platnick *et al.* (1991). However, some subfamily ranks are taken from Shears (1986).

ORDER ARANEAE

Suborder Opisthothelae – spiders with six or less spinnerets and unsegmented abdomen
  Infraorder Mygalomorphae
  Characters:
  a. Two pairs of book lungs
  b. Cheliceral fangs parallel to each other
  c. Pedipalps long and leg-like
  d. Paired sigilla present on sternum
  e. Four spinnerets, sometimes six anterior median absent, and basal lateral spinnerets semidivided
  f. Haplogyne vulva
        1. Family Theraposidae Thorell, 1869
        2. Family Barychelidae Pocock, 1897
        3. Family Dipluridae Pocock, 1897
  Infraorder Araneomorphae
  Characters:
  a. One pair of book lungs or absent
  b. Cheliceral fangs diaxial, opposing each other
  c. Pedipalps short
  d. Sigilla rare
  e. Six spinnerets common, with cribellum or colulus representing anterior median spinnerets often absent and basal segment of posterior lateral spinnerets not divided
  f. Haplogyne or entelegyne vulva
    Section Cribellatae
      Division Neocribellatae
          Superfamily Dinopoidea
            4. Family Uloboridae Cambridge, 1871
          Superfamily Agelenoidea
            5. Family Amaurobiidae Bertkau, 1878
          Superfamily Dictynoidea
            6. Family Dictynidae Cambridge, 1871
    Section Ecribellatae
      Division Haplogynae
          Superfamily Dysderoidea
            7. Family Oonopidae Simon, 1890
          Superfamily Scytodoidea
            8. Family Tetrablemmidae Cambridge, 1873
            9. Family Scytodidae Blackwall, 1852
          Superfamily Pholcoidea
            10. Family Ochyroceratidae Fage, 1912
            11. Family Pholcidae Koch, 1850
      Division Entelegynae
        Branch Dionycha
          Superfamily Dictynoidea
            12. Family Anyphaenidae Bertkau, 1878
          Superfamily Lycosoidea
            13. Family Ctenidae Keyserling, 1876
          Superfamily Salticoidea
            14. Family Salticidae Blackwall, 1841
          Superfamily Clubionoidea
            15. Family Clubionidae Wagner, 1888
            16. Family Prodidomidae Simon, 1894
            17. Family Gnaphosidae Pocock, 1894
          Superfamily Thomisoidea
            18. Family Thomisidae Sundevall, 1833
          Superfamily Philodromoidea
            19. Family Philodromidae Walckenaer, 1826
            20. Family Eusparassidae Simon, 1903

- Branch Trionycha
  - Superfamily Dictynoidea
    - 21. Family Hahniidae Bertkau, 1878
  - Superfamily Lycosoidea
    - 22. Family Oxyopidae Thorell, 1869
    - 23. Family Pisauridae Simon, 1890
    - 24. Family Lycosidae, Sundevall, 1833
  - Superfamily Palpimanoidea
    - 25. Family Mimetidae Simon, 1890
    - 26. Family Palpimanidae Cambridge, 1871
    - 27. Family Zodariidae Thorell, 1869
  - Superfamily Eresoidea
    - 28. Family Hersiliidae Thorell, 1869
  - Superfamily Araneoidea
    - 29. Family Theridiidae Sundevall, 1833
    - 30. Family Linyphiidae Blackwall, 1859
    - 31. Family Theridiosomatidae Vellard, 1924
    - 32. Family Tetragnathidae Menge, 1866
    - 33. Family Metidae C.L. Koch, 1836
    - 34. Family Araneidae Dahl, 1912

VI A Key to Identification of Families of Philippine Spiders

1 Two pairs of book lungs. Cheliceral fangs parallel to each other or paraxial. Anterior median spinnerets absent; anterior lateral spinnerets rarely present; basal segment of posterior lateral spinnerets partially divided. Pedipalps leg-like. Paired sigilla present in the sternum. MYGALOMORPHAE, the trap-door spiders. 2

– One pair of book lungs, occasionally absent. Cheliceral fangs opposing each other or diaxial to occasionally oblique. ARANEOMORPHAE. 3

2 Claw tufts present; last joint of lateral spinnerets long and pointed; and tarsi two-clawed. .... THERAPHOSIDAE

– Claw tufts present; last joint of lateral spinnerets short and rounded. .... BARYCHELIDAE

– Claw tufts absent. Tarsi with a small median and two large lateral claws. Each chelicera without a rastellum. Posterior spinnerets very long with three subequal segments. Thoracic groove a circular pit. .... DIPLURIDAE*

3 Six spinnerets. Cribellum and calamistrum present. Anal tubercle normally with single segment. 4

– Six, four or two spinnerets. Cribellum and calamistrum absent. 6

4 Femora II–IV with trichobothria, ventral row of erect macrosetae on tarsi IV, prolateral metatarsal concavity adjacent to calamistrum. Each chelicera without a boss. Eyes homogeneously black. .... ULOBORIDAE

– Femora without trichobothria. Prolateral surfaces of metatarsus IV normal. 5

5 Row (one or two) of tarsal trichobothria increasing in length distally. Colulus present, if present anterior spinners well separated. Cribellum divided. .... AMAUROBIIDAE*

– Tarsal trichobothria reduced or absent. Cribellum entire or normal with one segment. Each chelicera with boss. AME dark, other eyes pale. Eyes in two rows, PME fąacing upwards. Male chelicerae indented prolaterally. .... DICTYNIDAE

6 Six-eyed and without epigynum. A pair of tracheal spiracles just behind book lungs. Two claws present. Leg III directed backwards. Tarsal claws pectinate in double row. Female palp without claw. Often sclerotized with dorsal abdominal scutum. .... OONOPIDAE

– Eight-eyed or if with six then epigynum present and male palpal organ complex. A single posterior tracheal spiracle or none. 7

7 Abdomen with dorsal scutum, four ventral and three or four narrow lateral and posterior scuta. Eyes six or less. No posterior spiracle. .... TETRABLEMMIDAE*

– Abdomen without sclerotized plates as above, occasionally small anterior dorsal scutum present. Posterior spiracle present but often difficult to see. ... 8

8 Female genital opening unsclerotized or lightly sclerotized. Male pedipalps simple without apophysis. 9

– Sclerotized epigynum on which insemination ducts open (except Tetragnathidae and some Metidae). Each male pedipalp usually with apophysis. 11

9 Spiracle well forward of spinnerets. Genital groove or opening extended laterally on abdomen in females. Small spiders ca. 1–2 mm with proportionally long legs. .... OCHYROCERATIDAE*

* Families reported in the Philippines but not collected during the study.

– Spiracle just in front of spinnerets. Median lamella terminates distally to a tooth-like process. Both are long-legged spiders. 10

10 AME, if present, small. Rest of eyes in two triads. Male pedipalp with prominent procursus (paracymbium). .... PHOLCIDAE

– Six eyes in three diads. Paracymbium absent. Chelicerae fused. Cephalothorax dome-shaped. Tarsi each three-clawed, pectinate in double row. Pair of ventral pits in female behind genital groove. Spitting spiders. .... SCYTODIDAE

11 Legs with two claws. 12

– Legs with three claws. 20

12 Eight eyes arranged in three rows. 13

– Eight eyes arranged in two rows. 14

13 Each chelicera with boss. Anterior row of eyes on same level as other eyes and relatively small. AME smaller than PME, ALE between PME and PLE. Five pairs of ventral spines on each anterior tibia. Epigynum with lateral teeth. .... CTENIDAE*

– Each chelicera without boss. Eyes in three rows (anterior row of four eyes, followed by two rows of two eyes each). Anterior row of eyes on more or less vertical face with the median pair (AME) the largest and directed forwards. Jumping spiders. .... SALTICIDAE

14 Legs in prograde position. 15

– Legs in laterigrade position. 18

15 Anterior spinnerets conical contiguous at base or nearly so, slightly sclerotized than posterior spinnerets. Coxal lobes of pedipalp without depression. Posterior median eyes (PME) usually round. ... 16

– Anterior spinnerets separated or wide apart. 17

16 Trachial spiracle prominently anterior to spinnerets. .... CLUBIONIDAE

– Trachial spiracle at the middle of venter between epigastric furrow and spinnerets or close to the epigastric furrow. .... ANYPHAENIDAE*

17 Chelicerae diverging, spread and long. Eyes in three rows (anterior row of four eyes followed by two rows of two eyes each), C-shaped or deeply recurved. ... . PRODIDOMIDAE*

– Chelicerae touching each other, nearly straight sided. Eyes in two rows of four each with PME slanted (somewhat 'cross eyed'), endites concave and slightly constricted medially. .... GNAPHOSIDAE

18 Anterior tarsi without scopulae. Crab-like spiders. Legs I and II longer than III and IV. Eyes often outlined in white. The crab or flower spiders. .... THOMISIDAE

– Anterior tarsi with scopulae. 19

19 Medium-sized spiders (2.0–8.2 mm). Eyes never tuberculate. Body covered with squamose hairs. ... . PHILODROMIDAE

– Large to very large spiders. Eyes often tuberculate. Soft membrane at tip of each metatarsus permits extension of each tarsus beyond axis of leg. .... EUSPARASSIDAE

20 Each tibia and metatarsus of legs I and II with a row of long spines in the prolateral surface with shorter curved spines in the intervals. .... MIMETIDAE

– Legs without this arrangement of spines. 21

21 Tarsi and metatarsi each with trichobothria. 22

– Tarsi each without trichobothria. 27

22 Anterior pair of spinnerets largest and carried up during walking, the other two pairs very small and difficult to see. .... PALPIMANIDAE*

– Anterior spinnerets characteristically different. . 23

23 Chelicerae each without a boss. Maxillae triangular and directed across labium. Legs equally thick. Spinnerets two or more. .... ZODARIIDAE

– Chelicerae each with boss. Maxillae not as above. 24

24 Eyes hexagonal, anterior row strongly procurved and posterior row strongly recurved. Clypeus very high. Leg spines long and prominent. .... OXYOPIDAE

– Eggs never hexagonal, if approximately close then clypeus narrow. 25

25 Six spinnerets arranged in a transverse row, posterior spiracle far from spinnerets. .... HAHNIIDAE

– Spinnerets not in a transverse row. 26

26 Trochanters strongly notched. Eyes four, two, two or four, four. Usually no more than three pairs of ventral spines on tibiae and metatarsi I and II. . 27

– Trochanters not notched. 28

27 Eyes four, four. Posterior row of eyes only slightly recurved and appears in one row. One row of trichobothria on each tarsus. Male pedipalp with tibial apophysis. Eggs carried by the female on ventral surface of cephalothorax held by chelicerae and pedipalps. .... PISAURIDAE

– Eyes in three rows (anterior row of four eyes and two rows of two eyes each). Posterior eye row so strongly recurved as to form two rows (PME and PLE). Usually two rows of trichobothria on tarsi. Male pedipalp without tibial apophysis. Eggs carried by the female behind spinnerets. Young carried on female's dorsum. Lower claw with two or three teeth each. Hair plumose. .... LYCOSIDAE

28 Posterior spinnerets enormously long, usually longer than abdomen, with spinning tubes along the length of the inside edge. .... HERSILIIDAE

– Posterior spinnerets much shorter, never longer than abdomen. 29

29 Tarsus IV each with a comb of serrated setae ventrally, may be poorly developed in males. Labium not rebordered. .... THERIDIIDAE

– Tarsus IV each without such comb. Labium rebordered. 30

30 Chelicerae with stridulating ridges. Male paracymbium a separate sclerite. .... LINYPHIIDAE

– Chelicerae without stridulating ridges. 31

31 Tiny (1–2 mm) spiders. Sternum broadly truncate. Abdominal pattern non-foliate. Female pedipalps without claws. A pair of anterior sternal indentations present. .... THERIDIOSOMATIDAE

– Small-large spiders (2.0–20 mm). Sternum cordate. Abdominal pattern often foliate. Female pedipalps with claws. Orb weavers. 32

32 Non-sclerotized female genital aperture. Abdomen elongate and chelicerae long. Male with clasping spurs. Femora with trichobothria. .... TETRAGNATHIDAE

– Sclerotized or partially sclerotized female genital plate. Abdomen rarely elongated. 33

33 Abdomen ovoid, occasionally with humps. Paracymbium usually leaf-like and often divided. .... METIDAE

– Abdomen variable often with humeral, dorsal or posterior bumps. Chelicerae without stridulating ridges. Femora without trichobothria. Usually colorful spiders. .... ARANEIDAE

VII *Descriptions*

FAMILY THERAPHOSIDAE THORELL

(Bird-eating Spiders)

The hairy mygalomorphs or bird-eating spiders are moderately large to large (13–70 mm long), ground-dwelling forms with dense claw tufts. Some species build deep sinuous burrows without doors. These spiders are very sensitive to disturbances or vibrations, and if cornered will make a low vibratory noise or may rear up on the posterior legs. The hairs of the abdomen are rubbed off by the legs easily once caught, irritating the human hand or skin. The theraphosids have eight eyes in two rows of four compactly set on a tubercle. The lateral spinnerets have a long terminal segment pointed towards the tip.

The bird-eating spiders are common in the tropics. Approximately 30 species occur in the United States, *Selenocosmia* (two spp.) abound in Australia, and *Phlogiellus* and *Selenocosmia* in India. Six species belonging to five genera occur in the Philippines. A new genus *Baccallbrapo* is reported herein, increasing the total to six.

Baccallbrapo New Genus

Description: Medium-sized ground dwelling hirsute spiders 13–14 mm long. Eight eyes in two rows borne on a black C-shaped ocular band. AE row slightly procurved with diagonally positioned, half-moon shaped ALE. PE row slightly recurved with half-white PME and diagonally positioned PLE. Cephalic area partially elevated and V-shaped. Fovea deep, procurved with six striae. Chelicerae porrect, hairy dorsally and laterally, smooth retromarginally with one row of nine teeth, promargins without teeth but with scopulae. Chelicerae 2.5–3 times longer than wide and 1.4–1.5 times longer than high. Sternum longer (255 mm) than wide (44 mm) covered with dense setae, apex with a glabrous region below labium and four sigilla opposite coxae II and III in the female, none in male. Labium wider than long with ca. 200–400 thick cuspules on apical one third to one half. Maxillae roughly rectangular, longer (2.11 mm) than wide (1.22 mm), apicoretrolateral and basoprolateral corners protruded, proximally recurved opposite apicolateral corner of labium, inner proximal one third with majority of ca. 120–160 cuspules. Legs moderately long and robust, hirsute, five apical spines encircle each metatarsus, scopulae along the entire venters of each tarsus, metatarsi I to III and apical one half of metatarsus IV, scopulae divided in tarsi II–IV but not in I in male, undivided in female, ovate setae on dorsum of tarsi, all legs two-clawed with zero or one tooth each, except leg IV, which has an inferior claw; leg formula 4123. Trichobothria two rows in each tibia and tarsus and one row in each metatarsus. Abdomen oblong with upturned posterior lateral spinnerets. Posterior lateral spinnerets three-segmented, subequal in length, median pair small and oblong. Male pedipalps each with simple pyriform bulb and pointed embolus.

Type species: *Baccallbrapo bundokalbo* n. sp.

Diagnosis: *Baccallbrapo* differs from *Selenocosmia* in having an inferior claw in leg IV and divided scopulae of tarsi II–IV in the male. It is distinguished from *Phlogiellus* by the undivided tarsal scopulae of leg I in male and the undivided tarsal scopulae of all legs in the female. Generally, *Baccallbrapo* has characters of both *Selenocosmia* and *Phlogiellus*.

Etymology: The name *Baccallbrapo* in the masculine form is a combination of the first letter of the family names of research staff in the Cropping Systems Research Group.

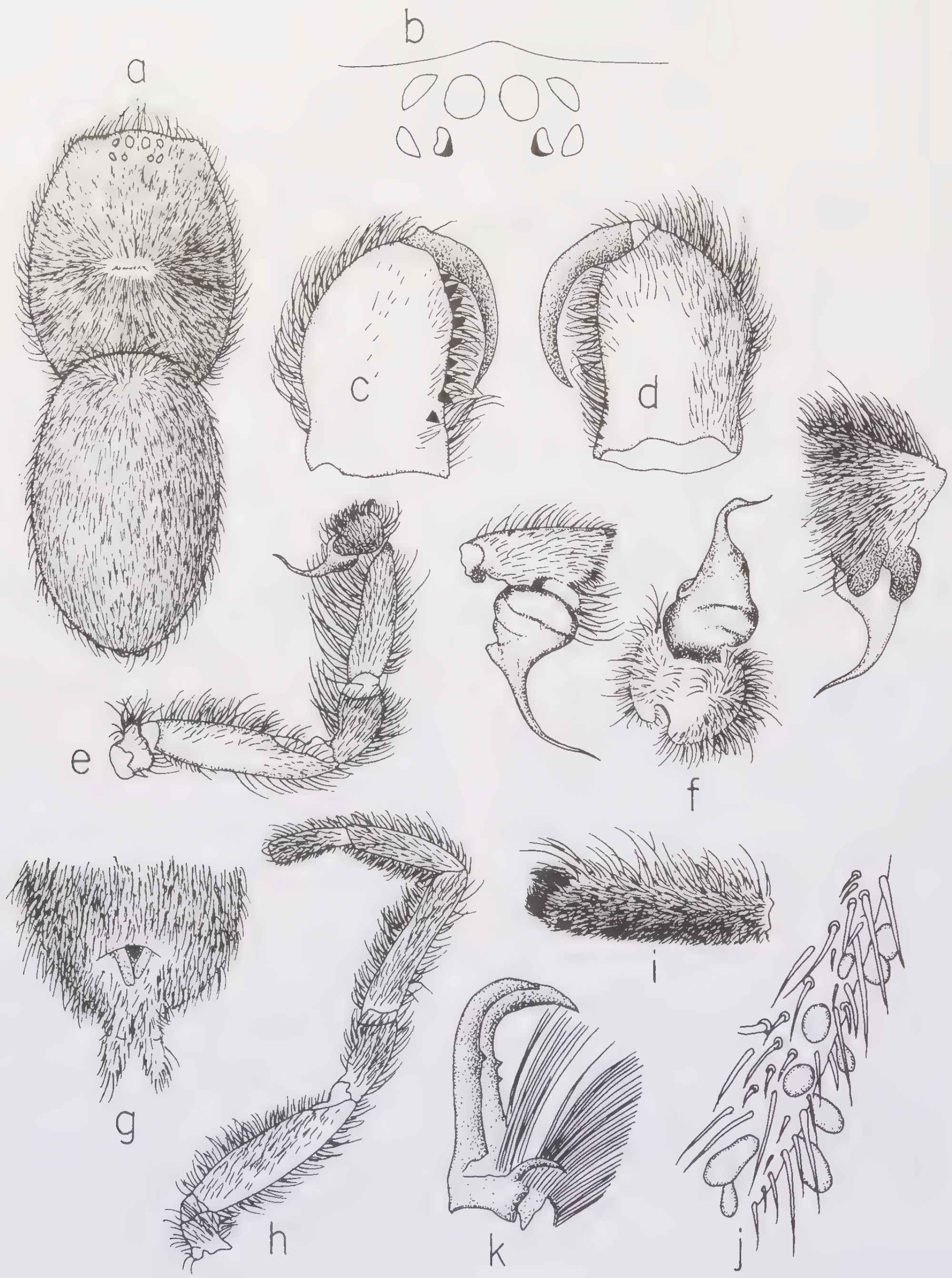

Fig. 5. Male *Baccallbrapo bundokalbo* n. sp. without legs and pedipalp (a); eye pattern (b); promarginal (c) and retromarginal (d) views of left chelicera; pedipalp (e) and different views of bulb (f); portion of abdomen showing spinnerets (g); leg I (h), tarsus I (i), and close-up of peg-like structures (j); and tarsal claw (k).

Baccallbrapo bundokalbo new species
(Fig. 5a–q)

Description:
Male (Fig. 5a–k): Total length 13.41 mm. Cephalothorax 6.58 mm long, 5.41 mm wide, 3.66 mm high. Abdomen 6.83 mm long, 3.91 mm wide, 4.16 mm high. Cephalothorax hirsute lightly depressed dorsoventrally, broader than long, and dark brown. Cephalic area higher than thorax, V-shaped, and truncated to slightly bulging along clypeal area. Deep fovea procurved and six-rayed. Lateral margins with long brown hairs. Eight

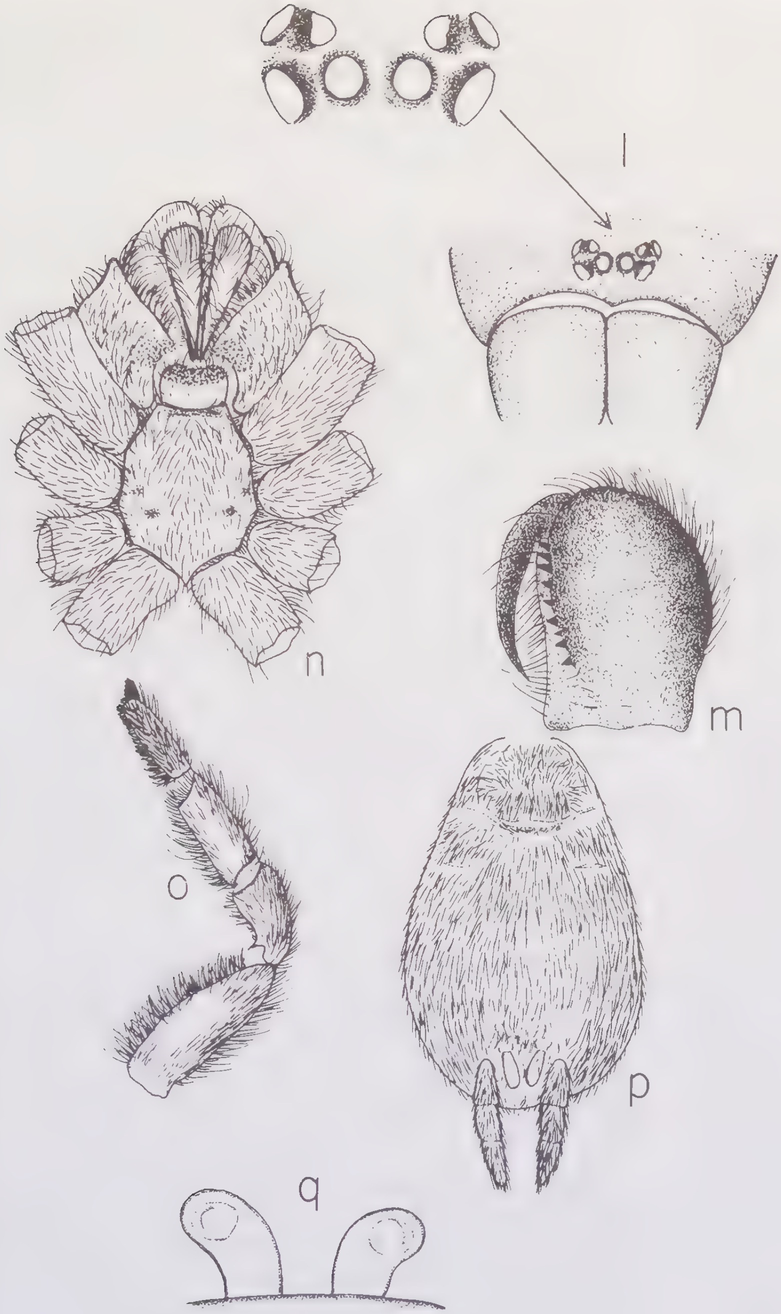

Fig. 5. (cont.) Female *Baccallbrapo bundokalbo* n. sp. eye pattern (l); right chelicera (m); sternum, labium, maxillae, and chelicerae (n); labial palp (o); venter of abdomen (p); and spermathecae (q).

eyes in two rows, intereye dimensions (mm): procurved AE = 1.24, subequal to a slightly recurved PE row, eye diameters (mm): ALE = 0.32, PLE = 0.26, AME = 0.24, PME = 0.17. AME separation one half AME diameter. AME–ALE separation one quarter AME diameter. PME separation 3.3 times PME diameter, PME close PLE, separation one thirteenth PLE diameter. Median ocular quadrangle wider behind (0.92) than in front (0.60). ME normal and LE semicircular. Clypeus height almost one AME diameter. Sternum longer (12.88) than wide (3.16 mm), widest between coxae II and III, narrow anteriorly with a slightly concave median area, pointed between coxa IV and clothed with erect hairs. Labium deep brown as in sternum and maxillae, thick cuspules on apical one half. Maxillae coxae-like, pointed on opposite ends of inner distal and outer proximal areas, cuspules aggregated in the basal one third above the recurved proximal, inner margins with scopulae. Chelicerae porrect and hirsute, retromargins only scopulae without teeth, promargin with nine. Legs prominently hairy, scopulae on metatarsi and tarsi, trichobothria in two rows in metatarsus, scopulae divided in tarsi of legs II–IV but not I, two-clawed except three-clawed leg IV, two or three rows of ventral spines prominent in metatarsus IV and four or five irregular rows in tarsus IV, leg formula 4123. Palp simple pyriform bulb with elongated and tapering embolus. Tarsal distal organ low and trochanter with bristles only.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.58	3.33	4.83	3.50	2.75	19.99
2	5.00	3.00	4.00	3.33	2.04	17.37
3	4.00	2.08	3.16	3.33	2.16	14.73
4	5.83	2.83	5.16	5.41	3.08	22.31

Abdomen hirsute and deep brown, higher than thorax, barely one third length of leg IV, venter clothed with short brown hairs, posteriorly with a white bell-shaped band between book lungs marked by erect stout setae and an aggregate of brown hairs anteriorly. Posterior spinnerets three-segmented, subequal in length, and upcurved anterior pair very small with yellow bases.

Female (Fig. 5l–q): Total length 13.41 mm. Cephalothorax 5.91 mm long, 4.33 mm wide. Abdomen 7.50 mm long, 4.16 mm wide, morphologically similar to the male except for eye length, diameter, palps, and division on tarsal scopulae. Eight eyes in two rows. AE row shorter (1.12 mm) than PE (1.20 mm). Eye diameters (mm): ALE = 0.36, PLE = 0.28, AME = 0.20, PME = 0.18. AME separation two third AME eye diameter. AME–ALE separation a little less than one half PME diameter and one sixth PME separation. PME separation 2.6 times PME diameter. PLE contiguous to PME. LE ovoid with long axis offset 45° from vertical globular and normal PME white half-moon shaped. Sternum with four sigillae opposite coxae II and III. Labium and maxillae with cuspules as in male. Legs shorter than male. Leg formula 4123. Tibial, metatarsal, and tarsal trichobothria similar to male.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.16	2.83	3.83	2.50	2.50	15.82
2	3.66	2.33	2.66	2.33	2.16	13.14
3	3.08	1.83	2.16	2.16	2.00	11.23
4	4.58	2.58	3.75	3.75	2.50	17.16

Tarsal scopulae all undivided, two-clawed with zero or one tooth in each claw. Inferior claw present on leg IV. Abdomen as long as one half length of leg I, ovoid and hirsute, venter with an inverted bell-shaped pattern above epigastric furrow. Spinnerets brown to yellow brown, posterior median similar to male, close to each other and unsegmented, posterior laterals yellow with brown hairs and upcurved.

Etymology: Derived from the Tagalog words for bald ('kalbo') mountain ('bundok').

Natural history: Collected by pitfall trap in slash-and-burn dryland rice adjacent to a secondary dipterocarp forest in November to February.

Material examined: **PHILIPPINES:** *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 16 January 1985, A.T. Barrion, paratype four females, and 11 immatures, November 1984 to February 1985, locality as holotype, Quezon Prov., Real, Llavac Vill., two females, 16 January 1985, R. Apostol.

Distribution: Philippines.

FAMILY BARYCHELIDAE POCOCK

(Barychelid Spiders)

The barychelid spiders are medium-sized mygalomorphae resembling Ctenizidae; however, they have dense claw tufts which enable them to run up smooth surfaces easily. They are usually aggressive and jump adroitly. The eyes are in a tubercle in three rows of two, two, and four. The most anterior eye pair runs close to the margins of the clypeus. Stridulating organ with a row of clavate pegs on front face of maxilla and long setae and rastellum on outer part of chelicerae. Third lateral segment of spinnerets short and globular. Males are dimorphic, with longer legs, tibia I has an apical spined apophysis, palp with conspicuous red bulb and short stigma.

These spiders build burrows up to 20.3 cm deep lined with parchment-like silk, and a saucer-shaped door fits tightly into the lip of the burrow. The whole intact silk net enclosing the spider can often be pulled from the burrow.

Barychelids are reported for the first time in the Philippines.

Genus *Idioctis* Koch

Idioctis C.L. Koch, 1874. Die Arachniden Australiens: 484.

Atrophonysia Benoit and Legendre, 1968. Rev. Zool. Bot. Africains 77: 330.

Idioctis Koch is a medium-sized barychelid spider. Members of the genus have hairy carapace without prominent pattern; procurved to straight broad fovea; rastellar spines not on elevated structures; maxillae with 18–20 cuspules in anterior corner; anterior lobe and posterior heel well developed; wide labium without cuspules; sternum long, narrow with small marginal sigilla in some cases. Scopulae in females entire on metatarsi and tarsi I and II, divided by setae on metatarsi III and tarsi III and even metatarsi IV if present. Female claws with teeth on median keel. Tarsi with clavate and filiform trichbothria. In water, tibia I bears prolateral spur and megaspine, more distal prolateral megaspine, and associated cuticular thumb; bulb of pedipalp pyriform.

Idioctis is distinguished from *Idiophthalma* by the narrow thoracic groove and sternum and presence of weak rastellum, and from other barychelid genera by the relatively short and strongly trapezoidal eye pattern.

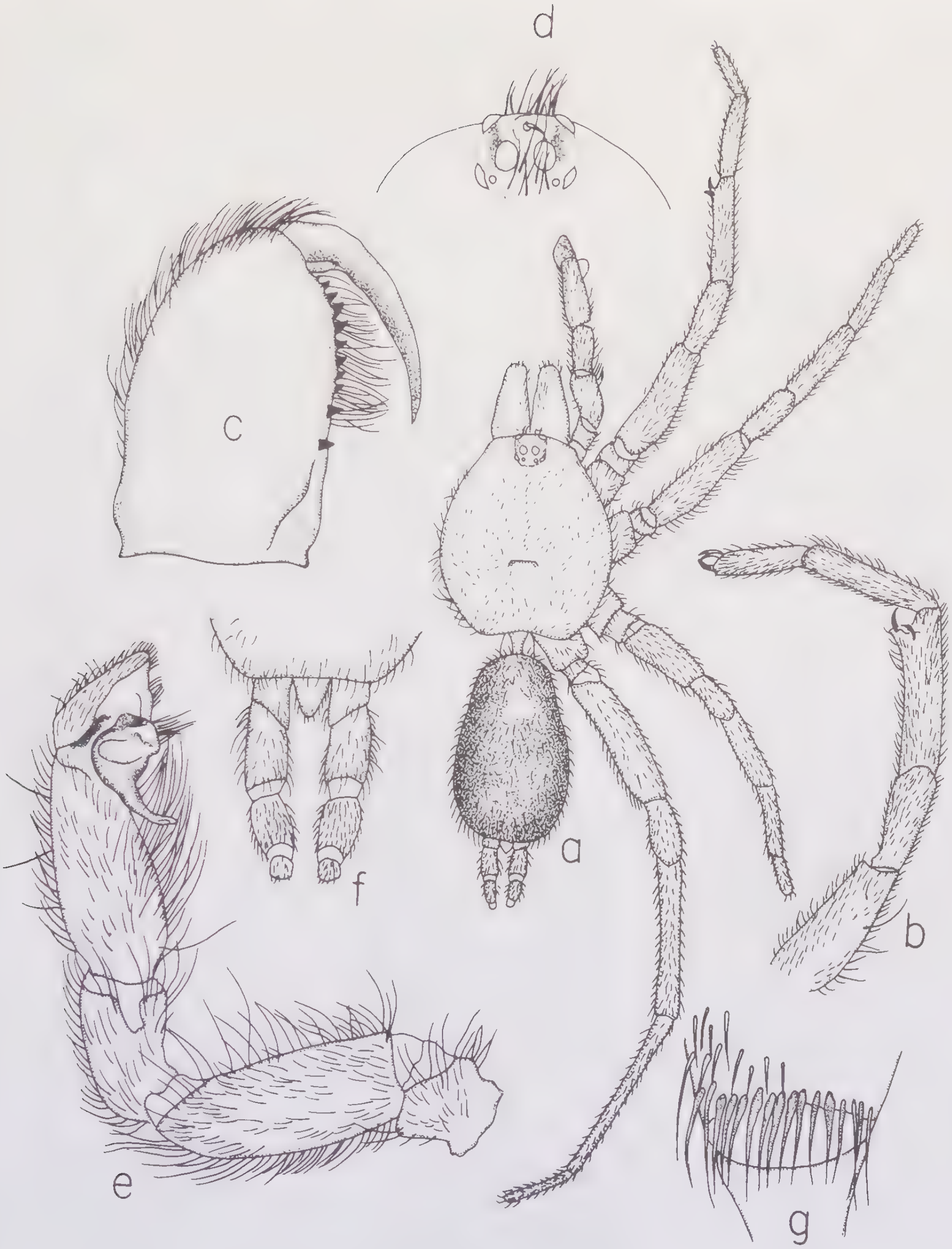

Fig. 6. Male *Idioctis sierramadrensis* n. sp., body (a); leg I showing tibial spines (b); chelicera (c); eye pattern (d); pedipalp and bulb (e); spinnerets (f); and rastellum (g).

Idioctis sierramadrensis new species
(Fig. 6a–n)

Description:
Male: Total length 12.40 mm. Cephalothorax 6.40 mm long, 5.50 mm wide, 4.15 mm high. Abdomen 6.00 mm long, 3.80 mm wide, 4.25 mm high. Cephalothorax reddish brown with black spines dorsally directed towards recurved fovea and stronger brown spines along lateral margins aborted prior to apex of cephalic region. Eyes in a light reddish brown tubercle arranged in three rows – clear ALE and AME and white PE. ALE oblique and close to clypeal margins, AME in the center of eye area, PE almost straight with slightly oblique PLE. Eye row length (mm): ALE = 1.00, AME = 0.71, PE = 1.03. Eye diameter (mm): AME = 0.33, ALE = 0.30, PLE = 0.31, PME = 0.10. Eye separation (mm): ALE = 0.55 in anterior and 0.95 in posterior, ALE–AME = 0.20, ALE–PLE = 0.30, AME–AME = 0.13, AME–PME = 0.08, AME–PLE = 0.10, PME–PME = 0.50, PLE–PLE = 0.63, PME–PLE = 0.025. In between ALE there are about 14 spines in two or three rows and posterior to AME at least seven spines. Clypeus very narrow but with a white transparent structure anteriorly.

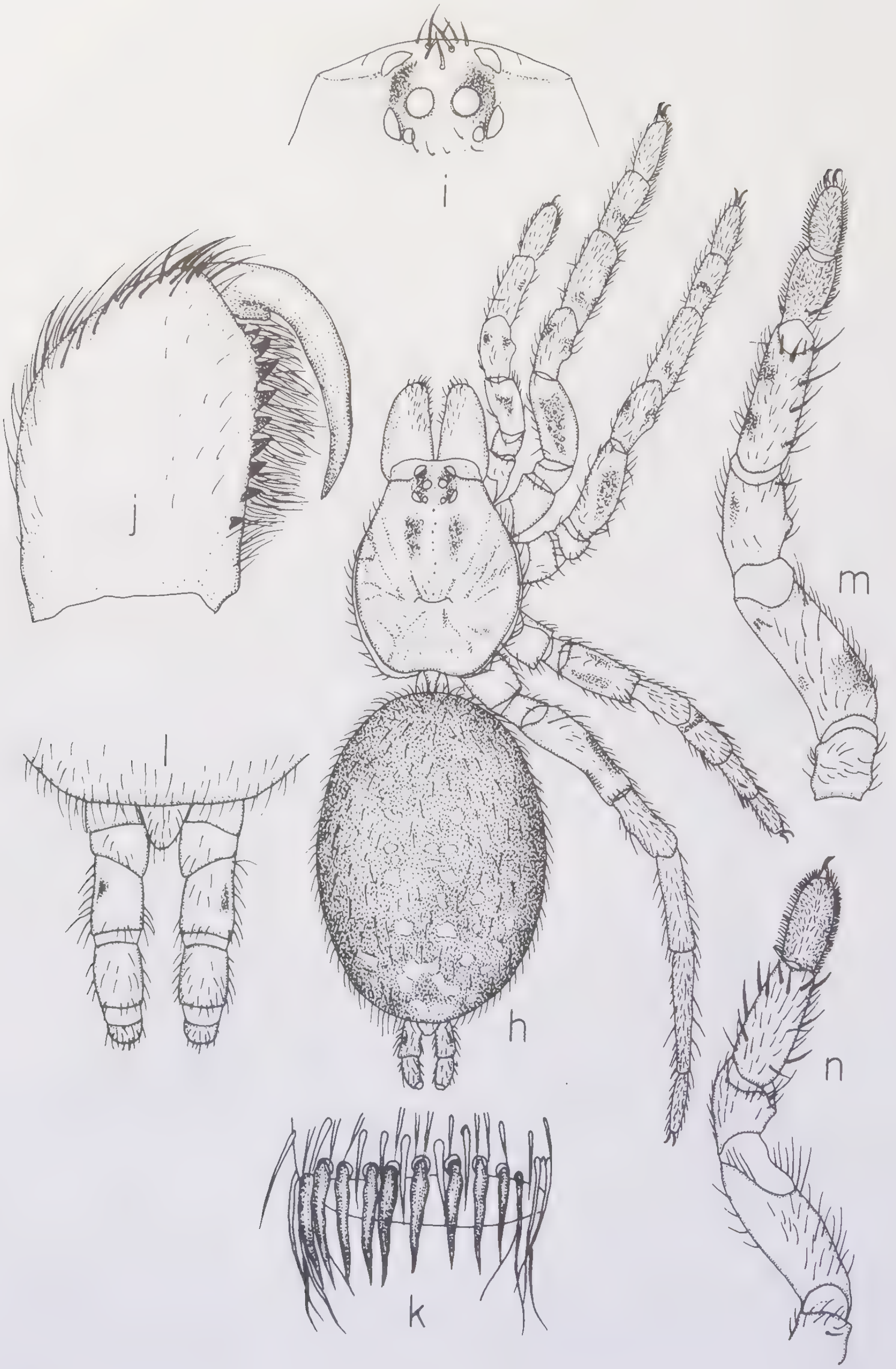

Fig. 6. (cont.) Young female *Idioctis sierramadrensis* n. sp. with banded legs (h); eye pattern (i); chelicera (j); and its rastellum (k); spinnerets (l); and pedipalps (mn).

Sternum yellow with brown margins, as long as wide and spinous. Anterior margins fused with dome-shaped labium and posterior end pointed anterior of coxae IV. Maxillae yellow, longer than broad, bases slightly swollen, each with six or seven cuspules and one cuspule in labium. Chelicerae robust with a long black fang, promargin bears 11 teeth, orange scopulae strongly developed, dorsoapical area with a transverse row of 13 or more prominent spines called a rastellum. Legs uniformly brown, tibia I with a pair of prolateroapical spurs and four (1-1-2) ventral spines, metatarsi I with two ventral spines and well-developed scopulae similar to tarsus I. Each tarsal claw in leg I with two to five teeth. Leg formula 4123. Pedipalp as long as combined length of patella IV and tibia IV, venter of trochanter slightly bulbous and swollen area hirsute, tibia moderately narrow towards apex, embolus bulb-shaped with a blunt tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.50	3.10	4.55	3.65	2.25	19.05
2	5.20	2.60	4.30	3.80	2.20	18.10
3	4.60	2.30	3.70	4.00	2.10	16.70
4	6.50	2.75	5.70	6.60	2.50	24.05
Pedipalp	2.70	1.75	2.50	-	1.50	8.45

Abdomen brownish gray with irregular yellow spots dorsally, distinctly hirsute, brown, yellowish brown spinnerets highly visible dorsally, venter dark brown towards spinnerets and yellow anteriorly except for four brownish book lungs. Terminal segment of lateral spinnerets short and rounded.

Etymology: Name after type locality.

Natural history: The single specimen was collected from pitfall trap set in slash-and-burn upland rice near a secondary forest in December.

Material examined: PHILIPPINES: *Luzon Is.* Quezon Prov., Real, Llavac Vill., holotype male, 12 December 1985, A.T. Barrion and M. Perez.

Distribution: Philippines.

Remarks: The immature females are associated with *S. sierramadrensis* n. sp. but were not described; unlike the male, the females have banded legs (Fig. 7g).

FAMILY ULOBORIDAE CAMBRIDGE

(Feather-legged Spiders)

The family Uloboridae contains a small number of very remarkable spiders. They have a calamistrum and an undivided cribellum, and build orb-webs but are morphologically different from the true orb-weavers. Uloborids have eight homogeneous dark eyes arranged in two well-separated rows. The labium is free, chelicera, with or without a boss, and the fang margins may have several teeth to only one tooth. Trichobothria occur in a row on the femora, one or two on the tibiae and metatarsi, and none on the spines on the ventral side of its distal one third. Unlike other spiders, uloborids lack a poison gland.

The genera *Uloborus* and *Miagrammopes* are most common. Another genus *Hyptiotes* (not collected in the study) builds triangular webs. *Miagrammopes* builds a single horizontal spring thread web with cribellated silk along part of its length. *Uloborus* is common in buildings, bushes, and orchards whereas *Zosis* lives in abandoned sheds, under bridges, in old garages, and in unattended coconut groves.

KEY TO THE ULOBORID GENERA AND SPECIES

1 Eyes in two rows of four each, AE and PE rows complete; PE row slightly recurved; sternum undivided; legs long, bear prominent black bands toward apices of femora to metatarsi (Fig. 7a); abdomen ovoid with an anterodorsal hump (seen laterally); epigynum basin-like with lateral flanges (Fig. 7b). .... *Zosis geniculatus* (Olivier) (Fig. 7ab)

– Eyes in one row of four, AE row lacking (Figs. 8–9); sternum divided; legs moderately short and without bands; abdomen elongate. 2

2 Female; cephalothorax almost parallel-sided; grayish with pale yellow apical margins of clypeus; legs grayish brown with light yellow tinges; leg formula 1243; abdomen gray-brown, broadest in apical one half. .... *Miagrammopes maigsieus* n. sp. (Fig. 8a–j)

– Male; brown cephalothorax wider in the cephalic area; legs yellow-brown, leg formula 1423; abdomen brownish black, $5\frac{1}{2}$ times longer than wide and broadest slightly posterior of midhalf; median apophysis of pedipalp bifurcate. .... *Miagrammopes brooksptensis* n. sp. (Fig. 9a-c)

Genus *Zosis* Walckenaer

Zosis Walckenaer, 1841. Hist. Nat. Ins. Apt. (Paris) 2: 229.

A very small group of feather-legged spiders represented by only two described species. Usually treated as a synonym of *Uloborus* Latreille, 1806 but revalidated by Lehtinen in 1967. *Zosis* spiders have eight eyes in two rows, PE row slightly recurved and PLE not on tubercles; cribellum and calamistrum present; femora II and III with trichobothria; tibia I without brush of hairs; tarsus IV with ventral row of macrosetae and sternum undivided.

Epigynum has no ventral atrium or paired lobes. Male pedipalp without a conductor but with a long, broad and flat tegular spur functioning as an embolus guide; paracymbium absent; cymbial setae developed; and femoral tubercle visible.

Females produce pinkish orange egg cocoons with six to eight rays (lateral extensions).

Zosis geniculatus (Olivier)

(Fig. 7ab)

Aranea geniculata Olivier, 1789. Encyl. Method. 4: 214.
Orithyia williamsi Blackwall, 1858. A.M.N.H. 3(2): 331.
O. luteola Blackwall, 1865. A.M.N.H. 3(16): 90.
Uloborus geniculatus Simon, 1893. Bull. Soc. Zool. France 18: 205.
Zosis geniculata Lehtinen, 1967. Ann. Zool. Fennici 4: 277.
Zosis geniculatus Davies, 1988. Mem. Queensland Mus. 25(2): 279.

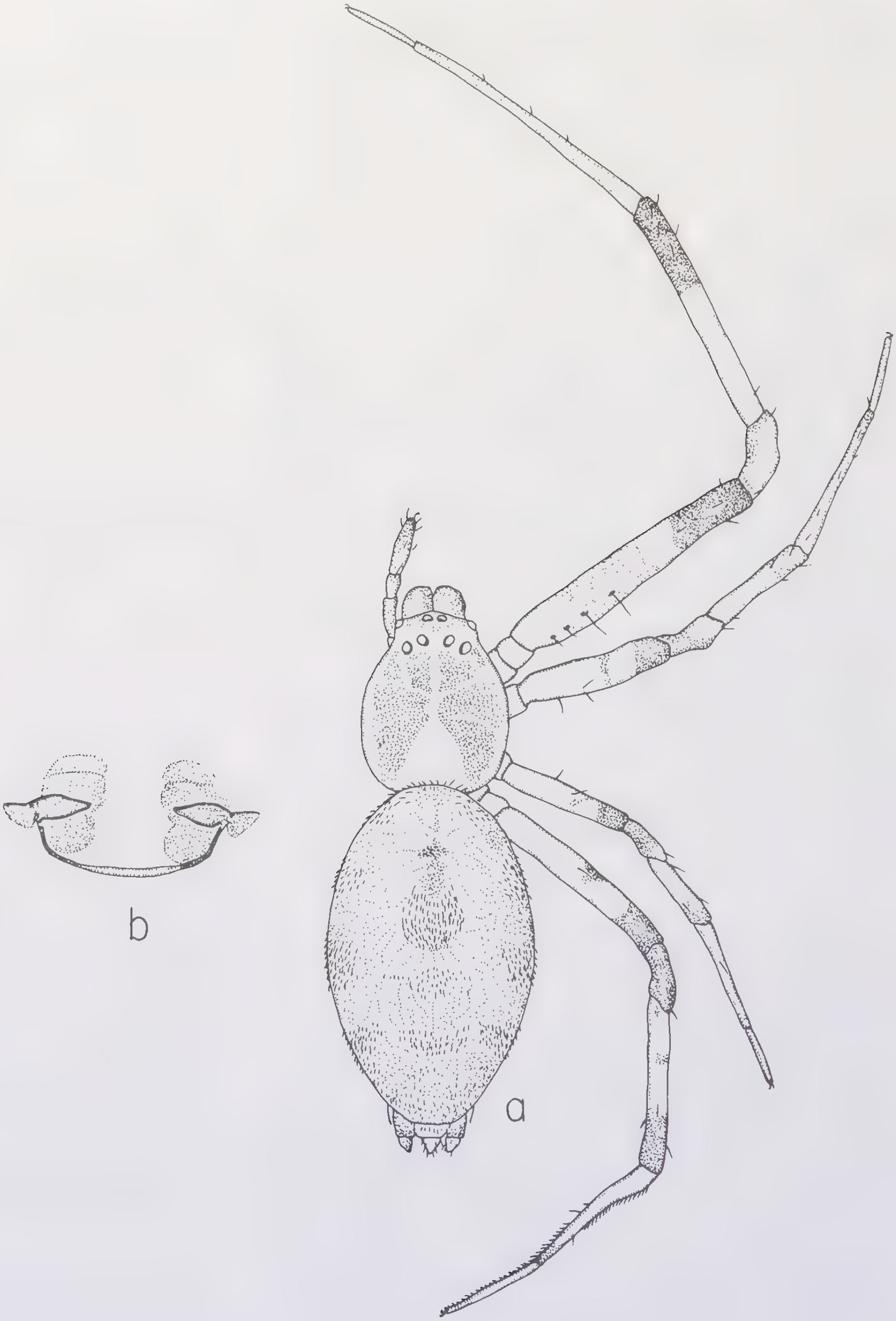

Fig. 7. Female *Zosis geniculatus* (Olivier), body (a) and epigynum (b).

Redescription:
Female: Total length 7.15 mm. Cephalothorax 1.95 mm long, 1.70 mm wide, 1.00 mm high. Abdomen 5.20 mm long, 3.75 mm wide, 4.10 mm high. Cephalothorax grayish except for the yellowish eye area, lateral margins, and a broad ovate yellow spot in the thorax. Eight eyes in two rows, AE row slightly longer (0.89 mm) than PE row (0.85 mm). Eye diameter (mm): PME = 0.16, PLE–AME = 0.15, ALE = 0.10. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.20. PME–PME = 0.18, PME–PLE = 0.16, ALE–PLE = 0.23. Clypeus height very small, less than one third AME diameter. Sternum longer than wide, mostly hirsute and grayish yellow except yellow edges, without hairs and undivided. Labium similar in color to sternum, apex rounded, and base fused with sternum. Maxillae yellow with gray

tinge, black scopulae and serrula. Chelicerae brown, moderately small with three promarginal and two retromarginal teeth. Middle tooth of promargin small, closer to apical tooth than to the basal tooth. Legs slender, bear few spines, yellow with black bands on apices of femora, tibia, and metatarsi, and brownish metatarsi and tarsi. Dorsum of femora I and II each with six or seven black spots, in femora II black spots with or close to trichobothria. Metatarsi IV bear the calamistrum with 42 or more hairs in the apicobasal two thirds and ventroapical one third with ten spines in a longitudinal row. Tarsus IV with 21 ventral spines in a longitudinal row. Leg formula 1423. Pedipalp slightly longer than tarsus IV, tarsus of pedipalp with a claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.50	0.95	2.85	3.00	1.10	11.40
2	2.10	0.70	1.45	1.80	0.90	6.95
3	1.50	0.55	0.90	1.30	0.80	5.05
4	2.65	0.75	2.00	1.80	1.20	8.40
Pedipalp	0.45	0.15	0.23	–	0.40	1.23

Abdomen gray-white with an aggregate of black hairs middorsally and posterior one third, ovoid but with a dorsal hump anteriorly (seen laterally only) overhanging thorax, venter with a broad brown band, transverse white band anterior of transverse yellow cribellum. Anal tubercle well developed, black and hirsute, and longer than basal segment of posterior spinnerets. Anterior pair of spinnerets yellow and gray, apical segment short and globular. Posterior pair black, apical segment slightly shorter than the more cylindrical basal segment. Epigynum sclerotized yellow brown, basin-like (strongly concave) and with a lateral flange.

Natural history: Two females were vial tapped from stocks of rice straw left in the field in May to August. One of the females has an orange to pink eight-rayed egg cocoon.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Oton, Rizal Vill., two females, 10 May 1979, M. Lumaban. **INDONESIA:** Yogyakarta, Klaten, Kerang Anon Vill., two females, 22 August 1989, A.T. Barrion.

Distribution: Throughout the tropics.

Genus *Miagrammopes* O. Pickard-Cambridge

Miagrammopes O. Pickard-Cambridge, 1869. J. Linn. Soc. Zool. Lond. 10: 401.

The uloborid *Miagrammopes* is a moderately small genus comprising 60 described species. The diagnostic characters are the prominently longer than wide cephalothorax and elongate abdomen; four-eyed (all PEs) in a transverse row with PLE on a lateral tubercle; AE row absent; sternal suture developed; coxa II closer to I than to III; cribellum and calamistrum present; tarsi shorter than metatarsi and tarsus IV bears ventral row of macrosetae.

Pedipalps of female with tarsal claw and males have tibial projection.

Miagrammopes builds webs made of one or more sticky threads connected to a non-sticky resting thread.

Miagrammopes maigsieus new species

(Fig. 8a–j)

Description:

Female: Total length 3.32 mm. Cephalothorax 0.88 mm long, 0.56 mm wide, 0.30 mm high. Abdomen 2.44 mm long, 0.46 mm wide, 0.46 mm high. Cephalothorax dorsum concave, grayish except black eyes and pale yellow apical margins of clypeus, widest along eye area, median depression absent, lateral ocular tubercle present. Clypeus height greater than PME–PLE separation, rounded apically between two small indentions and slanted anteriorly between PME and PLE. AE row absent, eye diameters: PME = 0.04 mm, separation five times eye diameter. PLE = 0.05, a little larger than PME, separation ten times eye diameter and four times PME diameter. PME closer to PLE than to each other. Chelicerae yellow, short and projected anteriorly. Sternum 3.6 times longer than broad, grayish brown, tapers at both ends, narrowed between coxae I and II and coxae III and IV, widest between coxae II and III separated by a notch. Labial palps each with a five-toothed claw. Legs grayish brown tinged light yellow throughout femora I and III each with two lateral trichobothria, IV with two dorsobasal and seven lateral trichobothria, proximal portion of tibia IV with two dorsal and one ventral trichobothria, proximal one fifth of metatarsus IV along base of calamistrum the widest, metatarsus and tarsus IV each with thick ventral spatulate hairs. Leg formula 1243.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.34	0.32	0.88	0.70	0.42	3.66
2	0.80	0.26	0.86	0.74	0.58	3.24
3	0.40	0.14	0.34	0.32	0.26	1.46
4	1.02	0.14	1.00	0.44	0.26	2.86

Abdomen grayish brown, broadest along apical one half, thinnest at basal one seventh. Anal tubercle prominently dark brown. Posterior spinnerets shortly cylindrical and three times longer than broad. Epigynum with a median notch above the white posterior epigynal margin.

Etymology: *Maigsieus* is derived from a Tagalog word for short ('maigsi').

Natural history: Collected by D-Vac suction machine in April from wetland rice under moisture stress. This must be a cryptic species that lives near the base of rice plants during summer.

Material examined: PHILIPPINES: *Palawan Is.*, Pala-

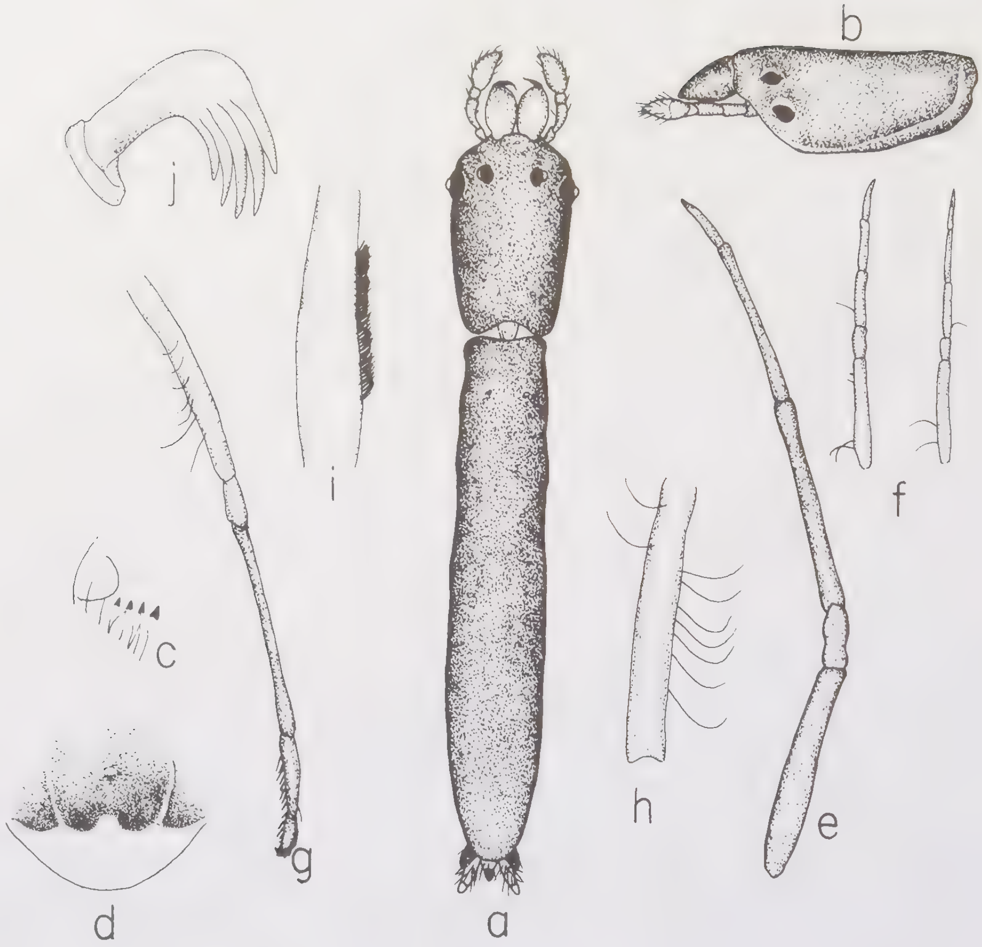

Fig. 8. Female *Miagrammopes maigsieus* n. sp., body (a); side view of carapace (b); teeth on chelicera (c); dorsal view of epigynum (d); legs I (e), II (f), IV (g) showing trichobothria on femur (h); calamistrum (i); and tarsal claw (j) of labial palp.

wan Prov., Narra, District I, holotype female, 24 April 1979. A.T. Barrion.
Distribution: Philippines.

Miagrammopes brooksptensis new species
(Fig. 9a–c)

Description:
Male: Total length 3.50 mm. Cephalothorax 1.30 mm long, 0.88 mm wide, 0.40 mm high. Abdomen 2.20 mm long, 0.40 mm wide, 0.40 mm high. Cephalothorax brown, 1.5 times longer than wide and broadest at eye area, attenuate anteriorly and posterior of thoracic area bears a truncate indention accommodating anterior abdomen. Four black eyes in a straight transverse row. Anterior eye row absent. Eye diameter (mm): PME = 0.08 and PLE = 0.10. Eye separations (mm): PME–PME five times eye diameter. PME–PLE 3.25 times one PME diameter. Sternum dirty brown, longer than wide and divided, thin and narrow between coxae I and II and coxae III and IV with a wide separation between coxae II and III. Sternal suture prominent between the anterior of coxae IV. Labium longer than wide and moderately pointed apically. Maxillae yellow and subcylindrically longer than wide. Chelicerae moderately and obliquely projected forward and downward, short and small, barely beyond trochanter of leg I in lateral view. Legs yellowish brown, coxae I closer to PLE than coxae II, femora I and II with trichobothria, metatarsi I with white thick hairs and five prolateral spines. Tarsi IV bear calamistrum in basal three fourths. Tarsi very short, 0.25 times metatarsi in leg I, 0.4 times metatarsi in legs II and IV, and 0.6 times metatarsi in leg III. Leg formula 1423. Pedipalp as long as femur IV, venter of femora hairy, tibial projection bluntly rounded and inner portion indented anterior to base of tegulum. Tibia bears a dorsal and a long prolateral setae. Median apophysis sharply pointed apically and bifurcate. Conductor small and sickle-shaped projected towards the median apophysis. Ejaculatory duct transversely bisects the tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.00	0.55	1.70	1.60	0.40	6.25
2	0.99	0.30	0.60	0.50	0.20	2.59
3	0.60	0.18	0.40	0.43	0.25	1.86
4	1.00	0.28	1.09	0.53	0.20	3.10
Pedipalp	0.33	0.13	0.20	-	0.36	1.02

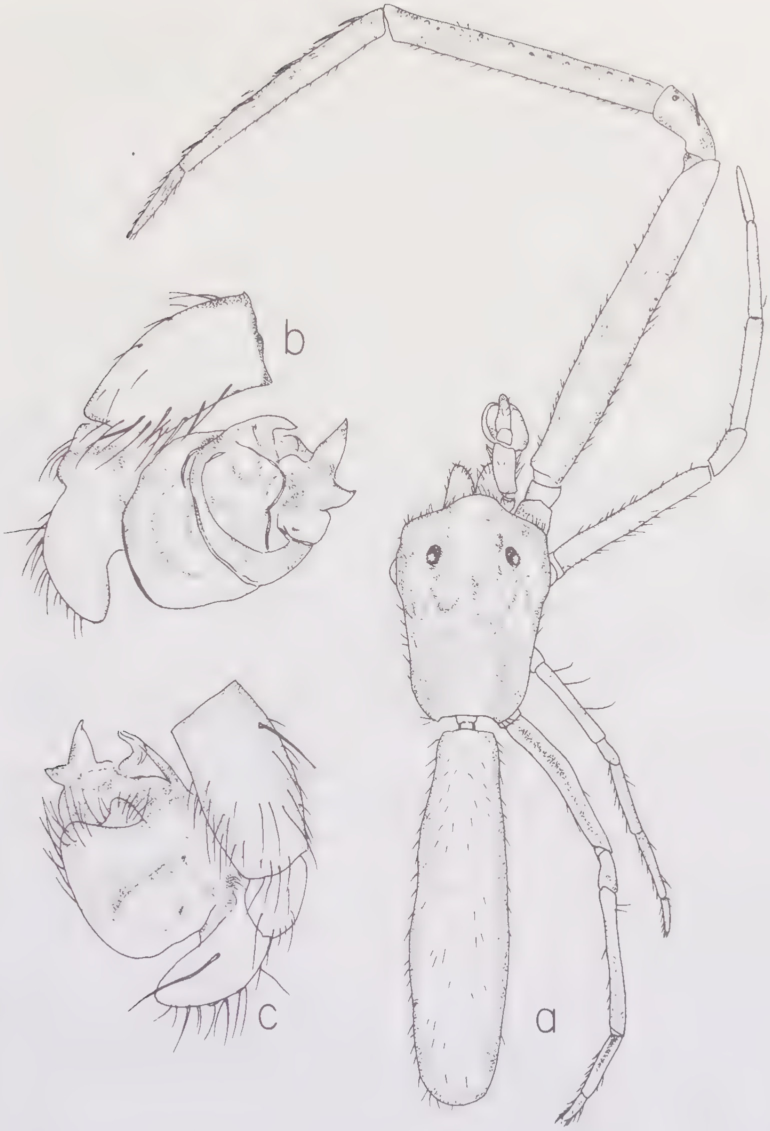

Fig. 9. Male *M. brooksptensis* n. sp., body (a); lateroventral (b) and dorsolateral (c) views of left palp.

Abdomen brownish black, 5.5 times longer than wide, posterior end thicker than the rest of the abdomen. Venter gray-brown and bears a yellow spot each midventrolaterally. Anterior and posterior pair of spinnerets both slenderly projected ventrally.

Etymology: Named after the type locality.

Natural history: A male holotype was collected from a yellow pan trap set in a border of an irrigated ricefield in June.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Brookes Pt, holotype male, 20 June 1987, A.T. Barrion.

Distribution: Philippines.

FAMILY DICTYNIDAE CAMBRIDGE

(Mesh Web Spinners)

Small spiders 2–5 mm in length possessing both a calamistrum and an undivided cribellum. Eight eyes in two rows across carapace or there may be only six with the AME (anterior median eyes) absent. The chelicera bears a boss and scopula, the margins of the fang provided with teeth. The labium is free. The tibiae and metatarsi have a few trichobothria but these are absent in the three-clawed tarsi. The sternum runs posteriorly between the hind coxae. They build sheet webs, which represent a mixture of roughly parallel to radially set silk strands in between a zigzag thread. Some threads have hackled bands.

The dictynids form the largest family of cribellate spiders but are rarely collected from rice or rice environments in the Philippines.

Genus *Dictyna* Sundevall

Dictyna Sundevall, 1833. Conspectus Arachn. 1833: 16.

Small spiders, less than 4 mm long. Carapace markedly elevated in front, rows of light hairs run anterior from the fovea to the front of the head and converge slightly anteriorly and posteriorly. Well marked cervical groove divides the cephalic from the thoracic region. Eyes are evenly and rather widely spaced. Clypeus wide. Male chelicerae are long, concave in front and bowed outward near the middle, pedipalp complex with a heavy conductor joining the embolus, and usually a spur arises near the proximal end of the tibia. Calamistrum borne on the middle one half to two thirds of entire length of metatarsus IV. Tarsi and metatarsi without trichobothria.

The abdomen is ovoid, almost white with a pattern of yellowish brown areas. The entire body is covered with long hairs, longest in the carapace.

Dictyna siniloanensis new species

(Fig. 10a–i)

Description:

Male: Total length 1.76 mm cephalothorax 0.68 mm long, 0.54 mm wide, 0.92 mm high. Abdomen 1.08 mm long, 0.70 mm wide, 0.64 mm high. Cephalothorax reddish brown except white hairs arranged in two rows in the clypeus just anterior to AME. Posterior end of carapace strongly recurved medially. Eyes with light brown to black margins borne on the front slope of the prominently elevated cephalic region, thoracic region tapers gradually posteriorly, widest above coxa II and III. Eyes homogeneous, eight in two recurved rows, strongly recurved AE row shorter (0.22 mm) than the lightly recurved PE row (0.26 mm). Eye diameters (mm): ALE = PME = 0.06, AME = PLE = 0.04. AME separation one AME diameter. AME–ALE separation one third ALE diameter. PME separation less than one PME diameter. PME–PLE separation one PLE diameter. LE eyes slightly separated. Median ocular quadrangle wider behind (0.15 mm) than in front (0.12 mm). Clypeus height 2.5 times AME diameter. Sternum reddish brown, finely punctated, longer (0.38 mm) than wide (0.34 mm), with lateral margins rebordered, apical end concave, and posterior tip nearly truncated with six short erect hairs and protruded beyond coxa IV. Labium same color as sternum and maxillae, just longer than wide reaching 0.7 height of maxillae. Maxillae longer than wide, converging distally and projected diagonally towards chelicerae. Chelicerae triangular viewed laterally, excavated median inner margins roughly sculptured, dorsolateral with a tubercle near base, dorsal (frontal view) part concave medially, promargin with two teeth and retromargin with one tooth. Outer promarginal tooth bifurcated. Petioles ventrally cylindrical or ring-like. Legs (I and three segments of II not seen) yellow-brown clothed with dense plumose hairs.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
2	–	0.20	0.48	–	–	–
3	0.36	0.16	0.28	0.24	0.19	1.23
4	0.44	0.15	0.36	0.32	0.20	1.47

Metatarsi and tarsi III and IV without trichobothria. Left pedipalp with the twisted process at the base of each tarsus pointed anteriorly and posteriorly and a scoop-like process at base of tegulum. Pedipalp's tibial apophysis with two separate cylindrical and rounded spikes.

Abdomen ovoid, black with two longitudinal white stripes dorsally, entirely clothed with short whitish plumose hairs. Cribellum present, divided by a fine ridge (note: difficult to see). Spinnerets parallel to each other, both widely separated by a distance equal to its length.

Etymology: The specific epithet is named after the type locality.

Natural history: A unique and rare species collected in September from a pitfall trap set in an slash-and-burn dryland ricefield adjacent to a secondary dipterocarp forest.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, holotype male (note: without leg I and three segments of leg II and right palp), 20 September 1984, A.T. Barrion.

Distribution: Philippines.

FAMILY OONOPIDAE SIMON

(Oonopid Spiders)

Oonopids are 3 mm or less in length. They are short-legged and have six tiny closely grouped eyes. Carapace smooth without thoracic fovea or impressions and markedly narrowed in front; AME absent; ALE widely separated; PE row with four eyes arranged in either straight, slightly recurved or procurved pattern. Sternum moderately wide, tapered posteriorly, and separates coxae IV. Chelicerae without teeth. Maxillae converge. Female palp without claw. Most species have brown to orange chitinous dorsal and ventral plates on the ovoid abdomen without pattern. A pair of transverse spiracles entering tracheae at the back of the book lung's openings present. Another pair is present, close together, one on each side of epigastric fold. Legs without scopulae, tibiae and tarsi usually with a series of paired spines (i.e. *Oonops* and *Ischnothyreus*), all tarsi with distinct onychium with two claws and each has two rows of teeth. Claw tuft absent.

Being small, they are rarely collected except by sieving leaf litter or through Berlese extraction.

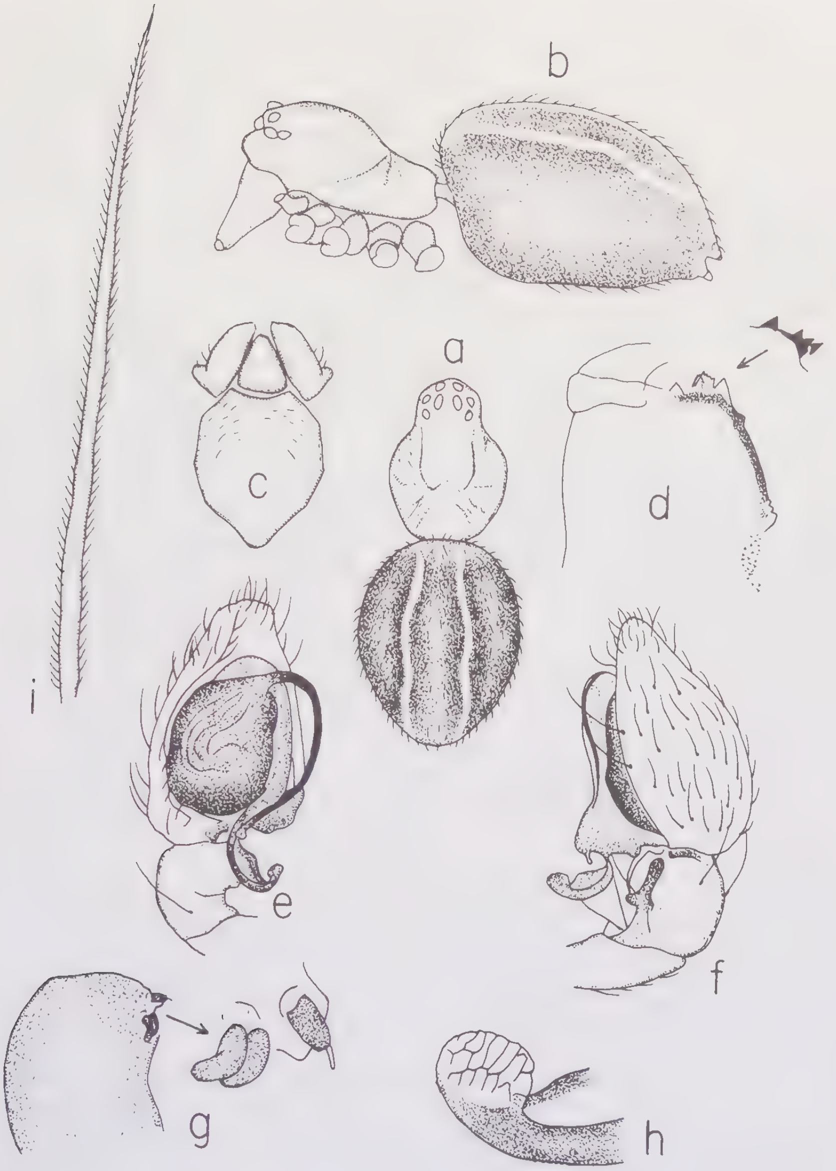

Fig. 10. Male *Dictyna siniloanensis* n. sp., dorsal (a) and lateral (b) views; sternum, labium, and maxillae (c); cheliceral teeth (d); ventral (e) and mesial (f) views of pedipalp; structure in tibial apophysis (g); portion of scoop-like process at base of tegulum (h); and plumose hair (i).

Genus *Opopaea* Simon

Opopaea Simon, 1891. Proc. Zool. Soc. London 1891: 549.

Members of this genus are very small spiders, less than 2 mm long, with only 18 known species. Cephalothorax strongly sclerotized, not elevated and posteriorly declining somewhat abruptly. Usually, they are reddish brown with six eyes, four posterior in a straight row and two anterior. The anterior lateral eyes are oblique, similar to PLE, and widely separated, AME lacking. PME somewhat larger than the others. Sternum heart-shaped with distinct brown furrows toward the laterals. Chelicerae vertical without boss, teeth and denticles lacking, and promargin with a double row of hairs. Clypeus vertical and very short. Legs spineless, segments somewhat short and thick. Abdomen ovoid, completely covered by hairy and finely granulated brownish yellow shields (sclerotized plates) dorsally and ventrally.

Pedipalps of male show enlarged femur and patella, and bulbus fused with the tarsus. The fused tarsus and bulbus separates *Opopaea* Simon from its closest relative, *Gamasomorpha* Karsch, 1881.

Opopaea batangueña new species
(Fig. 11a–i)

Description:
Male: Total length 1.48 mm. Cephalothorax 0.54 mm long, 0.44 mm wide, 0.16 mm high. Abdomen 0.94 mm

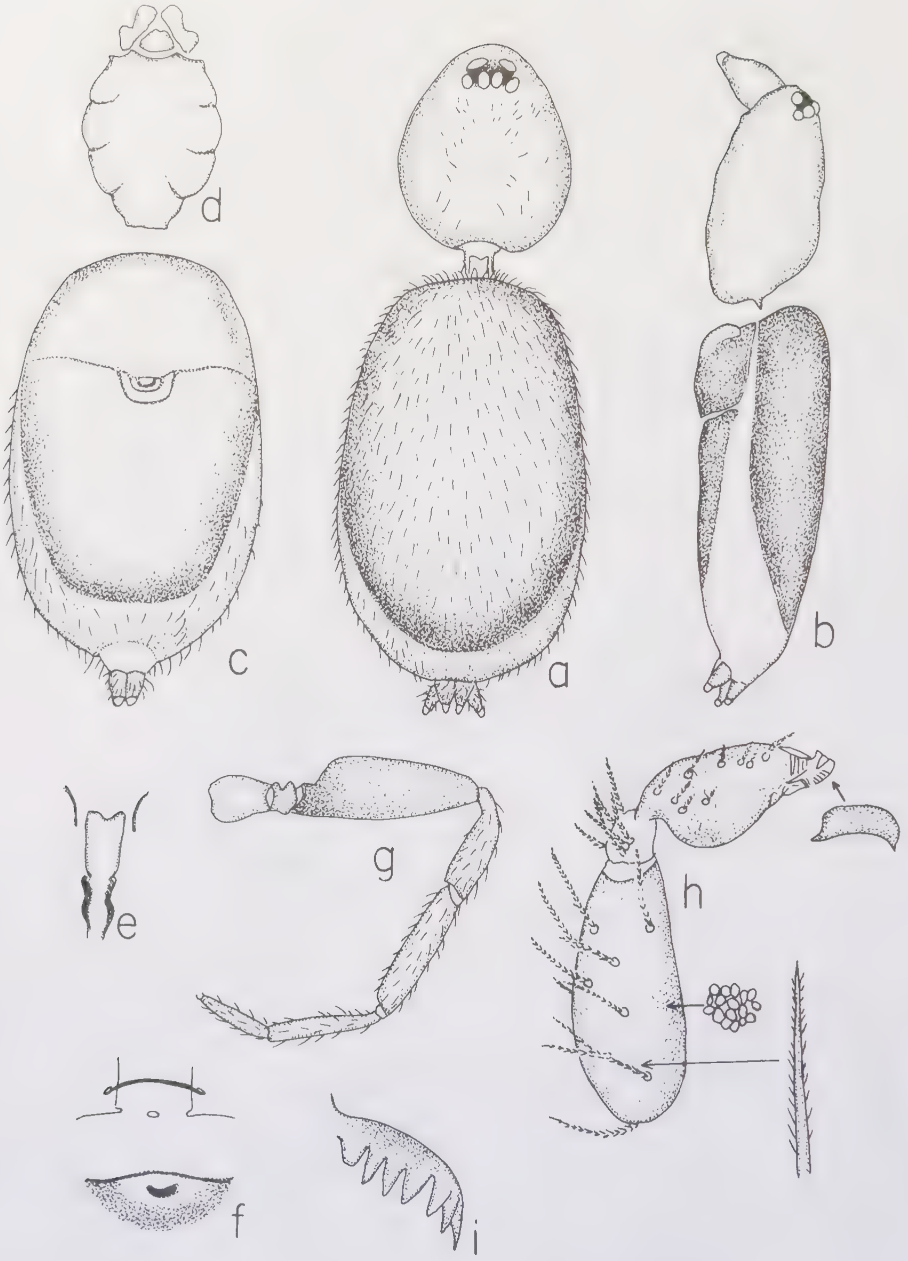

Fig. 11. Female *Opopaea batangueña* n. sp., dorsal (a) and lateral (b) view of body; venter (c) of abdomen; sternum, labium, and maxillae (d); pedicel (e); epigynum (f); leg I (g); male's pedipalp (h) showing close-up of apical structure, network pattern of femur and its hair; and tarsal claw (i).

long, 0.52 mm wide, 0.36 mm high. Cephalothorax ovoid viewed dorsally, dark yellow except black margins of both ocular area and brown carapace, narrowed anteriorly and prominently recurved posteriorly, dorsomedian area with a group of setae. Six-eyed, AME absent, eyes all pale, diameters ALE > PME > PLE. AE row shorter (0.12 mm) than PE (0.16 mm). ALE ovoid set diagonally 45° with apices converging, separation one third eye diameter. PME nearly contiguous, PME–PLE separation one third PLE diameter. Clypeus with two long and two short hairs, height equal PLE diameter. Labium free, wider than long. Maxillae converging above labium, 2.2 times longer than wide, scopulae on distal and inner lateral margins. Chelicerae vertical without any teeth, half the size of each pedipalp's patella and as long as each metatarsus of leg I. Pedipalps bulbous above, each femur short and less than one half of the enlarged patella, each tibia very small and barely one third of tarsal length. Sternum scutiform, just longer than broad, extends beyond coxa IV, shallow narrow grooves extend inward from coxae, completely sclerotized, posterior end bears four erect setae. Legs yellow clothed with hairy to plumose setae, six on femora, 14 on the enlarged patella, seven on the reduced tibia and 18 on the tarsus with globular granulations, robust spines absent, tarsi two-clawed with seven teeth and all bear an onychium, coxa III rounded. Leg formula 4123.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.32	0.20	0.22	0.20	0.14	1.08
2	0.30	0.20	0.22	0.20	0.14	1.06
3	0.24	0.16	0.16	0.16	0.12	0.84
4	0.32	0.20	0.28	0.24	0.16	1.20
Pedipalp	0.10	0.22	0.06	–	0.18	0.56

Abdomen dark yellow, ovoid, flattened dorsoventrally, dorsal and ventral sclerotization covers entire abdomen, laterals white and unsclerotized, sclerotized areas clothed with short light brown hairs. Spinnerets light yellow except brownish second segment subequal in length, a row of hairs circles spinnerets laterally and ventrally.

Female: Total length 1.68 mm. Cephalothorax 0.56 long, 0.46 mm wide. Abdomen 1.12 mm long, 0.60 mm wide. Very similar to male in structure except for longer body measurements, exposed posterior portion of abdomen, long femora and unenlarged patella of each pedipalp, and epigastric region. Leg formula 4123 like male. Epigynal structure double recurved bands.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.34	0.16	0.22	0.22	0.16	1.10
2	0.30	0.18	0.23	0.22	0.14	1.07
3	0.26	0.16	0.18	0.18	0.14	0.92
4	0.34	0.20	0.30	0.24	0.20	1.28

Variation: Males range 1.46–1.48 mm in length, females 1.52–1.68 mm. Posterior tip of female's abdomen either exposed or not. Sternum of males may have a rounded plate posterior to inward grooves. Lateral margins of carapace in both sexes in two spinners with fine and circular striations.

Etymology: The specific epithet was derived from the type locality.

Natural history: Little is known. Spinnerets, however, were collected from dried dryland rice stubble in October.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Lipa City, Marauoy Vill., holotype male, 21 October 1979, A.T. Barrion; paratype one male and two females, same data as holotype.

Distribution: Philippines.

Remarks: This species is most closely related to *O. lena* Suman 1965 described from Hawaii. *O. batangueña* differs from *O. lena* by the male pedipalp, epigastric region, relatively shorter legs, and longer abdomen.

FAMILY PHOLCIDAE KOCH

(Daddy-longleg Spiders)

The pholcids have very long, slender and thin legs with flexible ends. The long tarsi have false segmentation lines and bear three claws. The abdomen is long and cylindrical with or without distinct dorsal markings.

They build irregular webs underneath foliage, in shaded or dark places, and in the web the spiders hang with their back downwards. When disturbed, the hanging spider shakes the web rapidly to create a blurred web and seemingly lost spider. Males and females are commonly observed together in a web. Males have large but simple pedipalps. Females lack epigynum and, instead, have a bulbous or swollen area on the subapicoventral portion of abdomen. Female spiders carry the egg sac in their jaws.

Pholcids generally have eight eyes. Some genera, however, have only six arranged in two groups of three. The eyes are always close together, grouped in triads borne on a tubercle with pearly white ALE, PLE, and PME. The isolated AME is small and dark in color. The cheliceral claw is short and opposed by a tooth-like projection of the basal segment. The maxillae are divergent and contiguous apically.

KEY TO THE PHOLCID GENERA AND SPECIES

1. Abdomen globose and PE row recurved (Fig. 12a); chelicera with stridulating-like structure (Fig. 12d); trochanter with a retrolateral spherical pit (Fig. 12f). .... *Artema* sp. (Fig. 12a–g)

– Abdomen long and cylindrical with dorsal brown bands, legs I–IV extremely long with false tarsal segmentation (Fig. 13a); chelicera without stridulating-like structure and bears a subapicodorsal and a pair of dorsobasal teeth (Fig. 13b); eyes borne on a tubercle with a brown hair tuft posterior to PE row (Fig. 13d); trochanter without pit; pedipalp simple with two teeth in trochanter and one in femur, and tibia swollen (Fig. 13e). .... *Pholcus phalangioides* (Fuesslin) (Fig. 13a–e)

Genus *Artema* Walckenaer

Artema Walckenaer, 1837. Hist. Nat. Ins. Apt 1:656-657.

Artema Walckenaer, 1837 is a small genus of daddy-longleg spiders belonging to subfamily Pholcinae. It consists of five species distributed evenly in the Neotropical, Oriental, Ethiopian and Palaeartic regions. *A. mauricina* Walckenaer has a cosmopolitan distribution.

Members of the genus have a broad carapace marked by a deep groove at the median furrow; four anterior eyes recurved and well separated, AME smaller than ALE; PE row moderately recurved; posterior end of sternum extended behind coxae IV; male chelicera armed frontally with a large keeled apophysis; abdomen rather elevated and spinnerets located near the base.

Artema sp.
(Fig. 12a–g)

Description:
Young female: Total length 2.86 mm. Carapace 1.06 mm long, 1.06 mm wide, 0.75 mm high. Abdomen 1.80 mm long, 1.36 mm wide, 1.4 mm high. Cephalothorax yellow with brown median area, clypeus except margins, and three pairs of brown spots subdorsally, ocular rims black, fovea deeply longitudinal, ocular area borne in a globular pattern from the cephalic region. Eight eyes in two rows, strongly recurved AE row shorter (0.36 mm) than the lightly recurved PE row (0.40 mm), eye diameters (mm) ALE = PLE = 0.10, PME = 0.08, AME = 0.06. AME separation one half AME eye diameter. AME–ALE separation one fifth ALE and one third AME diameter. PME widely separated ca. one PLE diameter. PME nearly contiguous to PLE. Median ocular quadrangle much broader behind (0.28 mm) than in front (0.10 mm). Clypeus broad and inclined forward, height 6.3 times AME diameter. Sternum wider than long with labium contiguous to it apically, posterior end rather straight and not extended beyond coxa IV, apical one third of labium yellow and basal two third yellowish brown. Maxillae 3.7 times longer than broad, converging distally and with a longitudinal median brown band. Each chelicera yellowish brown, dorsolateral margin with stridulating-like organ, inner lateral margin partially concave below the prominent retromarginal tooth and fusing posteriorly near clypeus, each fang short and slightly transecting the tooth. Legs long, thin, and slender without spines, clothed with rather dense hairs in the metatarsi and tarsi, hairs either plumose, comb-like, or basally bifurcated, distal and proximal ends of femora and tibiae and entire patellae brown, false segments of tarsi not visible, retrolaterals of trochanter with spherical yellow pits rimmed brown distally, tarsi three-clawed with ca. 12 teeth and one tooth in the superior and inferior claws, respectively. Each pedipalp yellow, armed with four setae in the distal end of the pointed tarsus.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.32	0.44	3.36	4.08	1.00	12.20
2	2.60	0.40	2.36	3.00	0.80	9.16
3	2.00	0.36	1.64	2.32	0.72	7.04
4	2.80	0.40	2.56	3.12	0.72	9.60

Abdomen globular with six groups of gray spots (in three transverse rows) dorsally, laterally triangular with the spinnerets located at ventral tip, spinnerets closer to the anterior end than posterior.

Remarks: This is an interesting immature where morphological characters are shared by *Pholocophora* (globose abdomen, AME < ALE, slightly recurved PE), *Psilochorus* (forwardly inclined clypeus), and *Artema* (strongly recurved AE and moderately recurved PE).

Natural history: The immature female collected by sweep net in October from standing stubble of dryland rice at an elevation of 250–300 m. a.s.l.

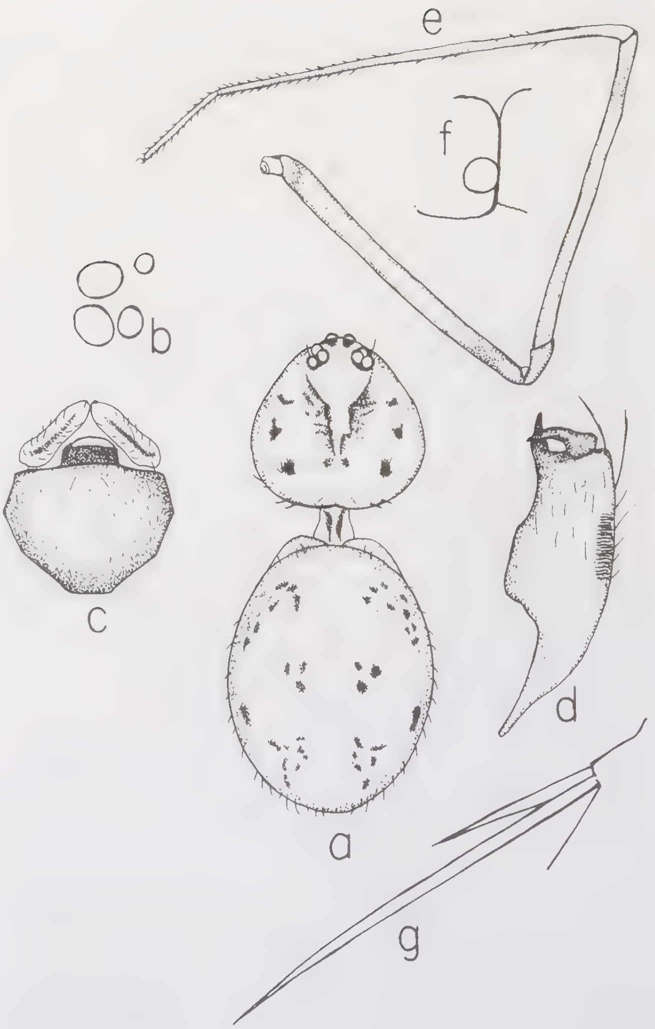

Fig. 12. Immature female *Artema* sp., body (a); left eye pattern (b); sternum, labium, and maxillae (c); chelicera showing fang and tooth (d); leg I (e); yellow pit with brown rim of trochanter (f); and bifurcate hair in metatarsus (g).

Material examined: PHILIPPINES: *Palawan Is.*, Brookes Pt., Mainit Vill., immature female, 1 October 1987, A.T. Barrion.

Distribution: Philippines.

Genus *Pholcus* Walckenaer

Pholcus Walckenaer, 1805. Tabl. Aran.: 80.

The genus *Pholcus* has a cosmopolitan distribution and contains 33 nominal species. The distinguishing characters are the long legs with false segmentation in the tarsi;

median ocular area much broader than long and AME are closer to each other (almost contiguous) than to the ALE. The abdomen is cylindrical and elongate, approximately three times as long as wide. Spinnerets are far removed from the epigastric fold.

Pholcus phalangioides (Fuesslin)

(Fig. 13a–e)

Aranea phalangioides Fuesslin, 1775. Verz. Schweitzerischen Ins.: 61.
Pholcus phalangioides Emerton, 1882. Connecticut Acad. Sci. 6: 30.

Redescription:
Male: Total length 6.30 mm. Cephalothorax 1.50 mm long, 1.10 mm wide, 0.75 mm high. Abdomen 4.80 mm long, 1.20 mm wide, 1.00 mm high. Cephalothorax convex, yellow-brown with black eye margins and a pair of porrect to curved dark brown hairs midposterior of two eye triads. All eyes borne on a tubercle provided with a transverse furrow posterior of the brown curved mass of hairs. Eye row length (mm): PE = 0.85 > AE = 0.80. Eye diameter (mm): ALE = 0.23 > PLE = 0.20 > PME = 0.15 > AME = 0.10. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.10, PLE–PLE = 0.68, PME–PME = 0.40. Clypeus height prominently large, seven times AME diameter. Sternum yellowish brown, slightly convex, posterior end broadly rounded and anterior end fused to labium. Maxillae similar in color to the sternum, apices projected towards each other and scoop-like in dorsolateral view. Chelicerae brown and small, with a pair of basodorsal spurs; in between spurs a deep notch; subapicopromarginal tooth and a promarginal tooth. Legs long and slender, yellowish brown. Leg formula 2431. Pedipalp yellow except reddish brown processes in the tarsus, approximately 0.52 times total length of femur I. Trochanter of pedipalp bears two processes pointed inwards. Subbase of femur with a spur parallel to the small process of trochanter and swollen basal one half. Tibia enlarged by as much as one half its length.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.30	0.50	5.40	8.40	1.30	21.80
2	9.10	0.65	8.50	13.90	1.90	34.05
3	6.30	0.55	5.55	8.40	1.20	22.00
4	8.90	0.60	7.90	12.40	1.75	31.55
Pedipalp	0.73	0.28	1.13	–	1.08	3.22

Abdomen 4.4 times longer than wide, cylindrical with three triangular-like brown bands towards the posterior half or solid brown band interrupted by an inverted V-shaped yellow band in the middorsal. Venter of abdomen yellowish brown. Spinnerets typical of *Pholcus*.

Natural history: The male specimen was taken from underneath a leaf of a young Gmelina tree (paper tree) bordering upland rice in June.

Material examined: PHILIPPINES: *Leyte Is.*, Leyte Prov., Baybay, VISCA complex, one male, 17 June 1985, A.T. Barrion.

Distribution: Cosmopolitan.

FAMILY SCYTODIDAE BLACKWALL

(Spitting Spiders)

Scytodids, commonly known as spitting spiders, have six eyes arranged in three diads. The AME is positioned well in advance and moderately larger in diameter compared to the lateral eyes. The weak and basally fused chelicerae bear no boss, and the fang furrow bears a hard lamella. Promargin with a transparent lamella. The labium is fused to the sternum, maxillae converge apically, and female pedipalp bears no true claws. A colulus is present, and may be rather large to indistinct. The legs are very slender without heavy spines.

Two genera – *Scytodes* and *Loxosceles*, the sedentary weaver – are well represented in temperate and tropical regions. However, only *Scytodes* is presented here.

Genus *Scytodes* Latreille

Scytodes Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 134.

Scytodes is a small genus comprising 20 nominal species widely distributed in the temperate and tropical regions of the world. Body length is about 5–7 mm. Carapace lacks fovea or thoracic impressions, hump posteriorly, pale yellow with numerous black mottles forming irregular lines or patterns. Eyes are arranged in three widely spaced diads, all whitish to light colored, AME pair much ahead of the laterals anteriorly and median eyes larger than the lateral eyes. Sternum ovoid, pale yellow with black spots opposite each leg. Labium fused to sternum. Chelicerae bear a very short squat fang and a conspicuous chitinous lamina on the outer margin of the basal segment, producing a chelate-like chelicera. Maxillae long and narrow with pointed apex converging. Legs annulated, long and slender with hind coxae widely separated. Retroclaw pectinate in a double row. The abdomen is ovoid to subglobular, mottled like carapace, venter with an indistinct median tracheal spiracle nearer to the spinnerets than to the epigastric furrow. Spinnerets small and preceded by a projecting slightly conical colulus. Epigynum absent, represented by oblique sclerotized pits.

The female carries her spherical brownish or purplish egg cocoons in her chelicerae held against the sternum.

Scytodes thoracica (Latreille)

(Fig. 14a–c)

Aranea thoracica Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 134.

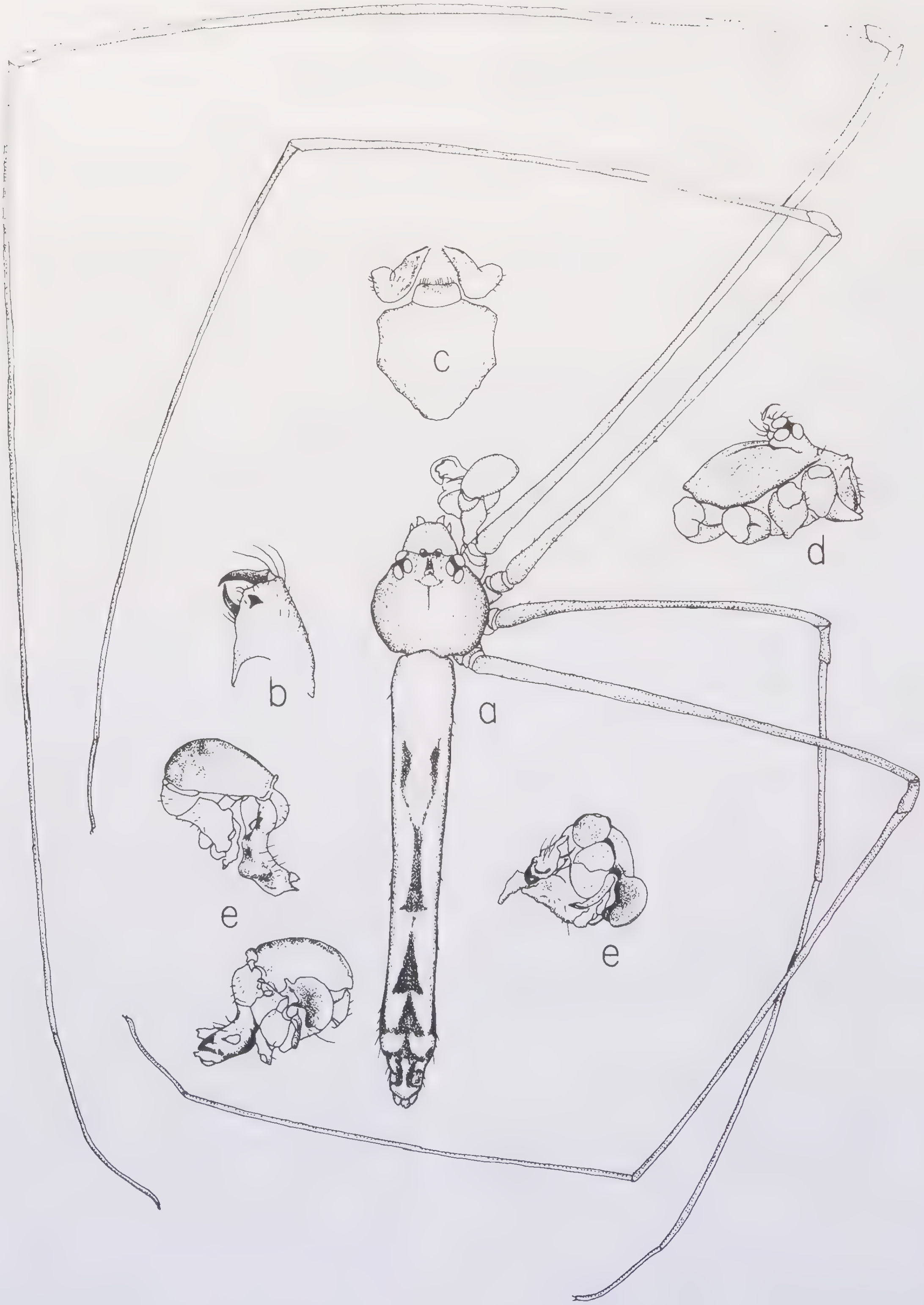

Fig. 13. Male *Pholcus phalangioides* (Fuesslin) (a); chelicera (b); sternum, labium, and maxillae (c); lateral view of cephalothorax (d); and different views of pedipalp (e).

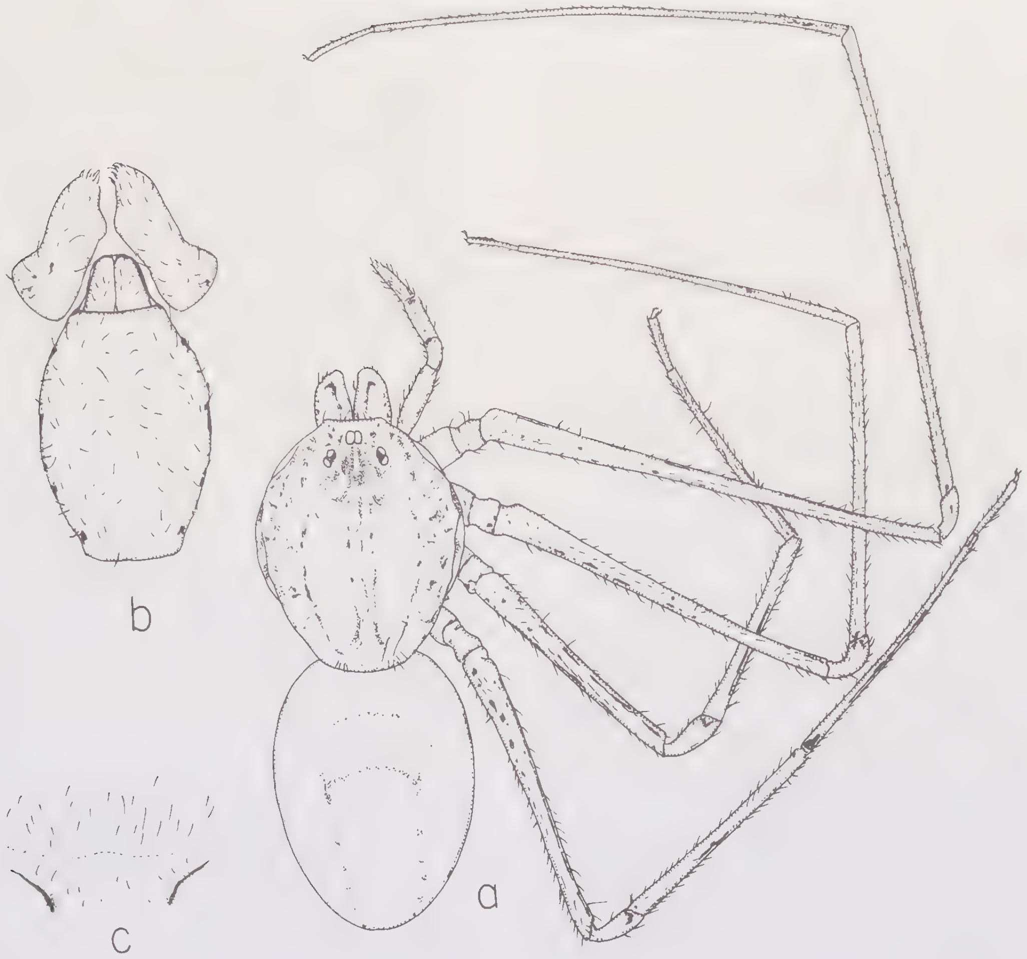

Fig. 14. Female *Scytodes thoracica* (Latreille) (a); sternum, labium, and maxillae (b); and epigynum (c).

Scytodes thoracica Emerton, 1882. Trans. Connecticut Acad. Sci. 6: 31.

Description:
Female: Total length 6.00 mm. Cephalothorax 3.10 mm long, 2.2 mm wide, 2.20 mm high. Abdomen 2.9 mm long, 2.2 mm wide, 1.90 mm high. Cephalothorax yellow with numerous black markings, thoracic area hump sloping downwards to the cephalic area, forwardly inclined portion with a pair of oblong marks or lyre-like pattern viewed dorsally. Six eyes whitish, in three compact groups with AME well placed in the anterior most and slightly larger (0.15 mm) than the laterals (0.13 mm), AME–lateral separation = 0.30 mm and lateral separation = 0.80 mm. Clypeus height = 0.16 mm, wider than one AME diameter. Sternum ovoid, pale yellow with a small black spot opposite each coxa, posterior end rounded. Labium yellow and fused to the sternum, short with a slightly concave anterior margin. Maxillae long and narrow, pointed and converging apically with slight concavity of scopulae before apex. Chelicerae bear a short squat fang and a distinct chitinous lamina, on the outer margin of the basal segment become chelate-like in structural appearance, dorsum with a black band and laterals with three black spots, and shorter than labium as seen in top view. Legs long and slender with annulations, strong spines absent. Leg formula 1423. Pedipalp annulated except tarsus with a pair (not three as reported by Locket and Millidge 1951) of knob-like claws.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.30	0.60	4.60	5.75	0.65	15.90
2	3.20	0.55	3.20	3.80	0.50	11.25
3	2.25	0.45	2.10	2.10	0.55	7.45
4	3.30	0.50	3.45	3.60	0.75	11.60
Pedipalp	0.70	0.35	0.50	-	0.70	2.25

Abdomen short and ovoid to globular with color pattern similar to carapace. Venter yellow except black spots laterally, pale tracheal spiracle closer to the spinnerets than to epigastric furrow. Spinnerets small and preceded by a projecting conical colulus. Epigynum absent, represented only by a pair of oblique sclerotized plates posterior to epigastric furrow.

Natural history: The single specimen was collected through kerosene light trapping in slash-and-burn upland rice set in a secondary dipterocarp forest in August.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., one female, 16 August 1985, R. Apostol.

Distribution: Cosmopolitan.

FAMILY SALTICIDAE BLACKWALL

(Jumping Spiders)

Adults range from 3 to 15 mm in length in these two-clawed hunting spiders. The body is usually compact and the stout legs are short and powerful. The anterior median eyes are conspicuously enlarged, situated on the ventral face, which is directed forward. The salticids owe their acuity to these enlarged eyes, making possible the cat-like way of stalking and catching prey which is characteristic of the group. The anterior lateral eyes are in line with the anterior medians; the posterior medians, which are by far the smallest, are behind the anterior lateral; the small posterior lateral eyes form a third row further posteriorly. Salticids may be hairy or hairless; lightly or brightly colored with striking patterns; the legs are spiny; margins of each fang furrow usually toothed; retromarginal teeth of three types – unidentate (one tooth or tooth lacking), fissidentate (one tooth with two or more cusps, rarely truncate or serrate), and pluridentate (many teeth, in series or isolated); chelicerae with scopulae and absence of smooth prominence at base. These spiders do not construct webs to catch prey (except *Portia*) but spin retreats or 'nests' in which they guard their silken egg sacs or enclose themselves during molting.

KEY TO THE SALTICID GENERA AND SPECIES

1 Inner margin (retromargin) of chelicerae with many teeth, in series or isolated (Fig. 15c, 16e), section *Pluridentati*. 2

– Inner margin with one tooth. 11

2 Not ant-like. 3

– Ant-like. 6

3 PME relatively large, carapace with a broad yellow-brown median band; abdomen distinctly longer than wide, bears broad longitudinal median white band (Fig. 15a); lateral margins of sternum well sclerotized and without deep cavities; retromargin has eight minute teeth; tibia I with ten ventral spines (Fig. 15d). ...... *Spartaeus uplandicus* n. sp. (Fig. 15a–g)

– PME small to moderately small; other characters not as above. 4

4 Sternum indented opposite coxae IV, posterior end truncate; chelicera with two promarginal and five retromarginal teeth. 5

– Sternum not markedly indented opposite coxae IV, posterior end rounded (Fig. 16b); chelicera with three widely separated promarginal teeth and three compact retromarginal teeth (Fig. 16c); tibia of pedipalp with a long process (Fig. 16de); sperm duct circles the tegulum and embolus strongly developed (Fig. 16f). .... *Phaeacius mainitensis* n. sp. (Fig. 16a–f)

5 Abdomen ovoid without band (Fig. 17d); promargin bears two teeth close to each other in decreasing size (Fig. 17e); epigynum semiovoid with an inverted U-shaped opening anterior to spermathecae (Fig. 17hi); retrolateral tibial apophysis (RTA) of male pedipalp pointed and curved inwards (Fig. 17j). .... *Emathis astorgasensis* n. sp. (Fig. 17a–k)

– Abdomen (Fig. 18a) elongate with a double-constricted yellow median band; promargin has two widely separated teeth (Fig. 18d); epigynum with a prominently sclerotized circular rim anterior to epigastric furrow (Fig. 18e). .... *Emathis makilingensis* n. sp. (Fig. 18a–k)

6 Outer lateral margins of chelicera with two teeth (Fig. 19a); cephalothorax longer than abdomen (Fig. 19b). .. *Myrmarachne bidentata* Banks (Fig. 19a–f)

– Chelicera not as above. 7

7 Ratio of abdominal length (AbL) : width (AbW) = 3.35; abdomen marked with a yellow H-shaped band and a pair of small lateral spots dorsally (Figs. 20a, 21a); promargin has 8–11 teeth and retromargin has six to seven small teeth (Figs 20b, 21c). .... *Myrmarachne markaha* n. sp. (Figs 20a–h, 21a–h)

– AbL : AbW less than 3, abdomen more or less globular. 8

8 Fang with a small inner tooth at midlength (Fig. 22c); chelicera constricted in outer posterior one third (Fig. 22c); retromargin with 14 small teeth and promargin with four large teeth (Fig. 22d). .... *Myrmarachne pinakapalea* n. sp. (Fig. 22a–g)

– Fang without inner tooth. 9

9 Female; legs I and II with distinct, straight longitudinal bands (Fig. 23a); tibia I bears nine ventral spines; metatarsus I with four ventral spines; deep groove separates cephalic area from the strongly convex thorax (Fig. 23b); chelicera with five promarginal and six retromarginal teeth (Fig. 23c). .... *Myrmarachne vulgarisa* n. sp. (Fig. 23a–h)

– Males; leg band not as developed as above; cephalic area higher than thoracic area; cheliceral teeth pattern different. 10

10 Ratio of carapace length (CL) : carapace width (CW) = 1.53; AbL : AbW = 1.35 (Fig. 24a); chelicera with a large apicopromarginal tooth and a smaller second tooth far posterior of the apical one (Fig. 24b); promargin with ten teeth; slender maxillae with diverging apices (Fig. 24c); femora I and basal half of tibia I black; venter of tibia I with six spines (Fig. 24d). .... *Myrmarachne caliraya* n. sp. (Fig. 24a–i)

– CL : CW = 1.65; AbL : AbW = 1.76; chelicera with apical and subapical teeth of promargin close to each other (Fig. 25bc); promargin with six teeth, the sixth tooth widely isolated and very basal (Fig. 25b); maxillae not slender, apices moderately converge (Fig. 25d); femora I with a black longitudinal band (Fig. 25f); tibia I with eight ventral spines. .... *Myrmarachne onceana* n. sp. (Fig. 25a–i)

– CL : CW = 1.82; AbL : AbW = 1.43; similar to *M. onceana* dorsally except for slender and sharply pointed posterior end of sternum (Fig. 26ab); promargin with seven teeth, space between fifth and sixth teeth with three minute retromarginal teeth (viewed laterally) (Fig. 26d); tibia I with six ventral spines. .... *Myrmarachne pinoysorum* n. sp. (Fig. 26a–g)

11 Retromargin with a simple tooth, occasionally lacking, section *Unidendati*. 12

– Retromarginal tooth bears two cusps, seldom truncated or serrulate, section *Fissidentati*. 31

12 Ocular quadrangle much wider behind than in front (Fig. 27a); CL : CW = 1.09–1.30; cephalothorax enlarged, slightly flattened and brown; male: abdomen with three pairs of white spots, large second promarginal tooth armed with peg-like wavy indistinct dorsal pattern; epigynum with a bell-shaped median hood. ... *Bianor hotingchiehi* Schenkel (Fig. 27a–e)

– Ocular quadrangle not wider behind than in front; ratio of CL : CW always greater than 1.00. 13

– Ocular quadrangle wider behind than in front; ratio of CL : CW usually less than 1.00. 30

13 Pars thoracica with striae; cephalothorax flat and wider than long, apically and posteriorly truncated abdomen (Fig. 28a); cymbium slightly obliquely truncate apically (Fig. 28 e–g). .... *Gangus manipisus* n. sp. (Fig. 28a–g)

– Pars thoracica without striae. 14

14 Lateral margins of carapace strongly convex. ... 15

– Lateral margins of carapace less convex or slightly parallel-sided. 20

15 Abdomen ovoid with two pairs of oblique, apically converging bands; cephalothorax with a pair of parallel, wide inverted V-bands (Fig. 29a); epigynum with a pair of spherical orifices (Fig. 29d). .... *Hyllus maskaranus* n. sp. (Fig. 29a–f)

– Abdomen prominently longer than wide, narrowed posteriorly. 16

16 Ocular area with short to long hair tuft; femur I bears five or six dorsal spines; tibia I with eight ventral spines; metatarsus I with four ventral spines; leg I hairy. 17

– Not as above. 18

17 Ocular area with short and sparse hair tuft and abdomen tapers posteriorly with a pale brown median band (Fig. 30ab); sternum widest at midhalf and narrowly truncate posteriorly (Fig. 30c); pedipalp long and slender, tibia longer than wide (Fig. 30e–g). .... *Epeus edwardsi* n. sp. (Fig. 30a–g).

– Ocular area with a long thick hair tuft and abdomen moderately oblong, widest medially (Fig. 31ab); sternum broadest at posterior one third, widely truncate posteriorly (Fig. 31c); pedipalp relatively short, tibia as long as wide (Fig. 31ef). .... *Epeus hawigalboguttatus* n. sp. (Fig. 31a–g).

18 Abdomen moderately wide at midhalf, often with gray bands dorsally; sternum slightly longer than broad; apices of maxillage moderately converge, constricted midlaterally. 19

– Not the combination of above characters. 21

19 Pars thoracica bears a black band laterally (Fig. 32b); CL : CW = 1.29; AbL : AbW = 2.76 (Fig. 32ab); abdomen with two broad subdorsal longitudinal bands (Fig. 32a); embolus arises from base of tegulum (Fig. 32e); tibia of pedipalp one third shorter than tarsus with very short VTA (Fig. 32f); cymbium with a cavity anterior of tegulum in lateral view (Fig. 32f). .... *Cosmophasis estrellaensis* n. sp. (Fig. 32a–g)

– Pars thoracica without black band laterally; embolus arises from lateral edge of tegulum; cymbium variable. 20

20 Promargin with two teeth close to each other; CL : CW = 1.28; AbL : AbW = 2.16; abdomen pointed posteriorly, grayish green with pale longitudinal yellow bands lateroanteriorly and a transverse yellow band subposteriorly (Fig. 33a); tibia short, barely one third of tarsus; VTA rather long (Fig. 33g); cymbium sickle-shaped (Fig. 33ef). .... *Cosmophasis parangpilota* n. sp. (Fig. 33a–g).

– Promargin with three teeth, apical two teeth widely separated; CL : CW = 1.28; AbL : AbW = 2.72; abdomen blunt posteriorly, white dorsomedian longitudinal and a long yellow subdorsal inverted U-shaped band present (Fig. 34a); tibia longer than wide, about two thirds of tarsus (Fig. 34fg); cymbium slightly indented subapically in lateral view (Fig. 34fg). .... *Cosmophasis trioipina* n. sp. (Fig. 34a–g)

21 Epigyne spherical with spermathecae converging anteriorly, ducts diverging and anterior epigynal margin distinct. 22

– Epigyne and spermathecae structurally different. 23

22 Thoracic area without spots; abdomen longer than wide, broadest at midlength, dorsum with four yellow longitudinal stripes converging anteriorly and posteriorly (Fig. 35a); anterior epigynal margin prominently half circular (Fig. 35e); spermathecae strongly converging anteriorly and ducts opposite each other in horizontal plane (Fig. 35 f). .... *Phintella bunyiae* n. sp. (Fig. 35a–f).

– Thoracic areas with a pair of subtriangular black spots (Fig. 36a); abdomen subglobular with a median X-line black band (Fig. 36b); epigynal margin circular and spermathecae slightly converging to parallel (Fig. 36ef). .... *Phintella piatensis* n. sp. (Fig. 36a–f)

23 Abdomen with a long and tail-like posterior end, two white longitudinal stripes present; cephalothorax bears four stripes (Fig. 37a); very common underneath coconut palm leaves. .... *Mantissatta longicauda* Cutler and Wanless (Fig. 37a–f).

– Abdomen without tail-like process. 24

24 Carapace broadest at midhalf; maxillae slightly constricted retrolaterally; stout abdomen prominently longer than wide, dorsal longitudinal stripes pale to prominently visible. 25

– Carapace nearly parallel-sided, if medially broad abdomen small and globular or moderately flat with robust chelicerae. 26

25 Male; carapace with a reddish brown inverted U-band around margin (Fig. 38a); abdomen bears two longitudinal reddish brown bands and two pairs of spots (Fig. 38f); tibia I with six ventral spines; metatarsus I with four ventral spines. .... *Telamonia masinloc* n. sp. (Fig. 38a–k)

– Female; carapace without U-band (Fig. 35a); abdomen with gray spots (pale gray band) posteriorly; tibia I with two ventral spines; metatarsus I with a single ventral spine. .... *Telamonia parangfestiva* n. sp. (Fig. 39a–h)

26 Mostly brown with a median yellowish white longitudinal band in thorax extended to the abdomen; posterior of abdomen with two to four yellow spots in males, zigzag to irregular median whitish yellow band in females. 27

– Cephalothorax and abdomen with different color and pattern. 29

27 Leg formula 1234; cephalic dark reddish brown and thoracic area yellow brown (Fig. 40a); abdomen without paired spots; sternal margins opposite coxae I and II concave (Fig. 40d); tibia I with six ventral spines; tibia III and patella III longer than tibia IV and patella IV; epigynum narrow with oval spermathecae and thick-walled copulatory canals very close to each other (Fig. 40hi). .... *Plexippus calcuttaensis* (Tikader) (Fig. 40a–i).

– Leg formula 4132; carapace with dark reddish brown inverted U-band; abdomen bears lateral reddish brown bands and paired spots posteriorly. 28

28 Male abdomen brown to yellow-brown with a broad yellow median band, posteriorly with four orange spots (Fig. 41a); tibial apophysis contiguous to the cymbium and nearly extended to top of bulbus; embolus longer than in *P. paykulli*; female epigynum elongate with a hollow median part, elongated copulatory openings slit-like running to short copulatory canals leading to ovoid spermathecae. .... *Plexippus petersi* (Karsch) (Fig. 41a–g)

– Male abdomen yellow with a pair of broad longitudinal gray-brown bands converging in the anal tubercle area, posteriorly with two to four symmetric white-yellow spots; tibial apophysis relatively short, laterally-hooked reaching one fourth of cymbium (Fig. 42ef); female abdomen with two moderately large globular yellow spots posteriorly (Fig. 42a); epigynum large with slit-like copulatory openings broad copulatory canals with thick walls and spermathecae oval (Fig. 42cd). .... *Plexippus paykulli* (Audouin) (Fig. 42a–f)

29 Carapace parallel-sided, without paired black spots dorsally (Fig. 43a), moderately flat laterally (Fig. 43b); dorsum of abdomen with a transverse white band slightly below midlength and a white spot in posterior tip (Fig. 43c); venter of tibia I bears five pairs of spines, one each prolaterally and retrolaterally; apical promarginal tooth smaller than the basal tooth (Fig. 43e). .... *Thiania viscaensis* n. sp. (Fig. 43a–i)

– Carapace, abdomen, venter of tibia I and promarginal tooth all different from above. 30

30 Promargin of chelicera with a thumb-like apical tubercle and a small posterior tooth (Fig. 44d); body length more than 6 mm long. .... *Rhene hinlalakea* n. sp. (Fig. 44a–h)

– Promargin of chelicera with simple triangular tooth (Fig. 45c); body length less than 6 mm long. .... *Rhene habahumpa* n. sp. (Fig. 45a–e)

31 Carapace narrower than PLE (in male only); abdomen globular, dark brown and gleaming, male with scutum (Fig. 46a); femora and tibia with feathery bristles (Fig. 46e; 47f–h). .... *Harmochirus brachiatus* (Thorell) (Figs 46a–g, 47a–j)

– Carapace wider than PLE; leg I without feathery bristles. 32

32 Cephalothorax pale brown to slightly gray except

dark brown eyefield; thoracic area with a broad brown transverse band (Fig. 48a); abdomen bears a longitudinal median band forming orange spots posteriorly (in fresh specimens); tibia I with seven ventral spines covered by hairs (Fig. 48f). .... *Hasarius adansoni* (Audouin) (Fig. 48a–k).

– Entirely different from above. 33

33 Retromargin of maxilla slightly indented at midhalf; eye area with a black U-band; abdomen 2.5 times longer than wide with a broad black spot subposteriorly and a pair of small black spots posteriorly (Fig. 49a); tibia I bears 12 ventral spines. .... *Gambaquezonia itimana* n. gen. et sp. (Fig. 49a–e)

– Retromargin of maxilla deeply indented at midhalf; eye area without U-band; tibia I with less than 12 ventral spines. 34

34 Yellowish white longitudinal median band runs from fovea to abdominal tip, band serrated in the abdomen (Figs 50a, 51a); chelicera very robust, strongly diverging, each with a diagonal ridge dorsally, basal tooth of both margins bifurcate (Figs 50c, 51c). ... . *Chalcotropis luceroi* n. sp. (Figs 50a–e, 51a–e)

– Combination of characters entirely not as above. 35

35 Male; abdomen with three pairs of reddish brown spots (Fig. 52a); chelicerae moderately robust and diverging with a long retromarginal tooth having two cusps (Fig. 52c); tibia I with two pairs of ventral spines; leg formula 1423. .... *Simaetha damongpalaya* n. sp. (Fig. 52a–f)

– Female; abdomen dark brown to yellow-brown with silvery lustrous green marks, two anterodorsal triangular spots, two oblique transverse bands midlaterally and an inverted U-band posteriorly (Fig. 53a); retromarginal tooth tetradentate (Fig. 53d); tibia I with four pairs of ventral spines; leg formula 4123. ...... *Simaetha makinanga* n. sp. (Fig. 53a–g)

Genus *Spartaeus* Thorell

Boethus Thorell, 1878. Mus. Civ. Store, Nat. Giacomo Doria 13:220 [junior homonym of *Boethus* Foerster, 1868].
Spartaeus Thorell, 1891. Kongl. Svenska Vet.-Akad. Handl. 24(2):137.
Nealces Simon, 1900. Annls. Soc. Ent. Fr. 69:30.
Boethuola Strand, 1929. Latv. Augstsk. Rak. 20(29):15 [replacement name for *Boethus* Thorell].
Spartaeus Wanless, 1984. Bull. Brit. Mus. (Nat. Hist.) 46(2):147–152.

Spartaeus Thorell belongs to the new and heterogenous group of jumping spider subfamily Spartaeinae (Wanless 1984). It is a small genus of medium to large spiders (4.0 to 8.5 mm long) with only five described species and its distribution rather restricted in Sri Lanka, China, Thailand, Malaysia, Singapore, and Indonesia.

Members of the genus are characterized by moderately high carapace. Prominently long fovea. Eyes on pronounced tubercles, anterior row almost contiguous with apices slightly recurved frontally and recurved dorsally. AME the largest. ALE greater than half AME diameter. PME moderately large and closer to ALE. PLE as large as ALE and positioned well inside the lateral margins of carapace. Posterior ocular quadrangle wider behind and broader than long. Clypeus moderately low and chelicerae robust. Promarginal teeth five to seven and retromargin with seven to 11 minute teeth. Sternum elongate and shield-shaped. Labium as long as wide. Maxillae diverging apically, relatively long and distal outer margins rounded. Legs long and slender. Femur I of male bears a femoral organ ventrally. Tibia I and metatarsus I with numerous long ventral spines. Tarsal claws pectinate and claw tuft present. Female pedipalps bear an apical claw. Male pedipalp relatively complex but with weakly developed interlocking protuberances. Rudimentary anterodorsal tubercle present in the patellae. Tibiae with ventral and retrolateral apophyses, dorsoprolateral tubercle, and a slightly dorsoretrolateral flange. RTA broad with ventral spike. Cymbium narrowed distally with scopulae apically. Embolus distinctly long and curved. Distal haematodocha bears a membranous patch M_1 and a whitish prong M_2 with a sclerotized rod-like structure. Tegulum bulbous with a short filamentous structure M_3, crescent shaped furrow, and peripheral seminal ducts. Subtegulum at distal end of basal haematodocha partially sclerotized and pleated. Epigyne variable with spermathecae often globose and ducts in between rather parallel.

Spartaeus uplandicus new species
(Fig. 15a–g)

Description:
Female: Total length 7.20 mm. Cephalothorax 3.00 mm long, 2.40 mm wide, 1.80 mm high. Abdomen 4.20 mm long, 1.80 mm wide, 1.20 mm high. Cephalothorax brown marginally except black eye margins and a broad yellow-brown median band, longer than wide with the cephalic area flat in lateral view and thoracic area inclined at 45° slope. Fovea short but deeply sunken in a furrow behind midpoint of PLE. Eyes in tubercles enclosed in the middle of the ocular quadrangle a wide shallow groove. Eye row length (mm): AE = 2.00, PLE = 1.80, PME = 1.48. Eye diameter (mm): AME = 0.68, ALE = PLE = 0.35, PME = 0.20. Eye separation (mm): AME–AME = AME–ALE = 0.08, PME–PME = 1.10, PLE–PLE = 1.33, ALE–PME = 0.40, PME–PLE = 0.50. Clypeus height small, one half PME diameter. Sternum 1.3 times longer than wide, yellow-brown with an inverted gray Y-shaped band, straight anterior margin, blunt posterior end, thickened lateral margins, and pointed edge areas behind each of the

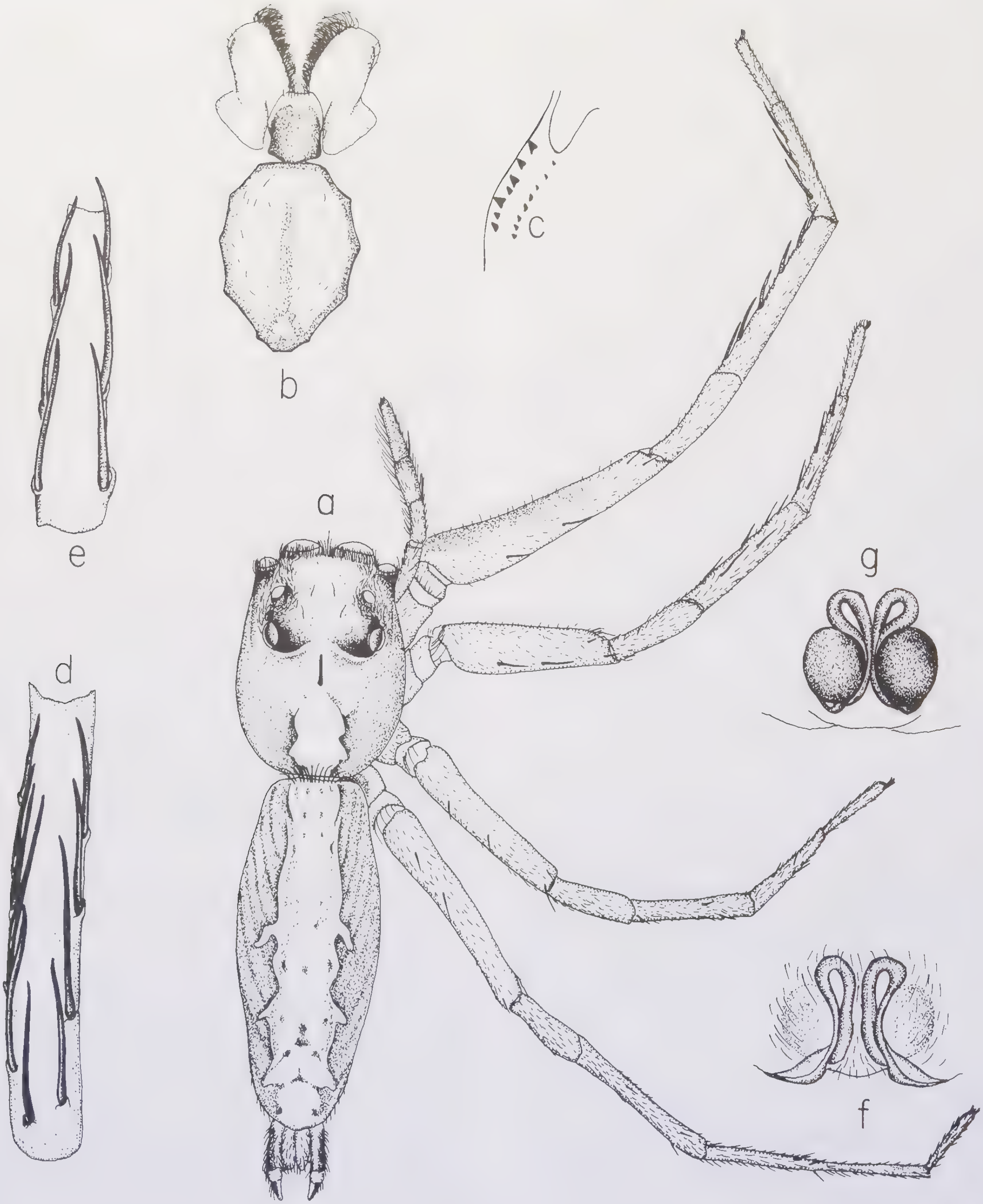

Fig. 15. Female *Spartaeus uplandicus* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); ventral spines in tibia I (d) and metatarsus I (e); and dorsal (f) and ventral (g) views of epigynum.

coxae. Labium dark brown with yellow apical margins and slightly wider than long (0.45 : 0.50 mm). Maxillae moderately slender, inner half yellow, the rest gray-brown. Scopulae developed on the inner area of the maxillae. Chelicerae reddish brown. Promargin with seven teeth, the fourth one the smallest. Retromargin with eight minute teeth set close to each other. Legs long and slender, yellow except gray bands in femora I, all metatarsi and tibia and tarsus of pedipalps. Tibia I with ten (2-1-1-1-2-2-1) ventral spines and metatarsi has three pairs (2-2-2). Prolateroventral surface of tibia I has six spines and four on the retrolateroventral surface. Leg formula 4123. Pedipalp yellow-brown with brown band on tibia and tarsi, total length slightly longer than combined length of tibia II and metatarsus II. Femur bears three dorsal spines. Tibia with two retromarginal spines and its apicoventer with a black spot. Tarsus has an apical spine and three retromarginal (two subbasal and one median) spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.90	1.50	2.85	1.80	0.65	9.70
2	2.25	1.05	2.00	1.50	0.60	7.40
3	2.10	0.75	1.80	1.70	0.70	7.05
4	2.80	1.00	2.65	2.70	1.00	10.15
Pedipalp	1.10	0.60	0.70	–	1.20	3.60

Abdomen 2.3 times longer than wide, brown with a broad white median band, posterior half of white band with three pairs of lateral extensions. Abdominal venter brown with white bands laterally, and median area bears paired yellow dots almost reaching epigastric furrow. Posterior pair of spinnerets long and prominently visible dorsally, outer half black and inner half yellow. Basal segment of posterior spinnerets twice longer than the apically pointed terminal segment. Anterior spinneret as long as basal segment of posterior spinneret, robust and has yellow apical and inner half of basal segment. Epigynum with a pair of ovoid spermathecae separated by a pair of single-looped insemination ducts. Median guide narrow and tongue-like posteriorly relatively far from epigastric furrow.

Etymology: After the upland rice environment in which it was collected.

Natural history: Vial-tapped from upland rice showing water stress in October.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Narra, holotype female, 30 October 1987, A.T. Barrion.

Distribution: Philippines.

Genus *Phaeacius* Simon

Phaeacius Simon, 1900. Annls. Soc. ent. France 69:32.
Cocalus Thorell, 1892. Mus. Civ. Stor. Nat. Giacomo Doria 31:353 (in part).
Phaeacius Wanless, 1981. Bull. Br. Mus. Nat. Hist. (Zool.) 41(4):199–212.

Phaeacius Simon is a distinctive group of jumping spider belonging to subfamily Spartaeinae. It is relatively large in size (7.5 to 11.5 mm long) but rarely found in museum collections. Wanless (1981) attributed this rarity to the remarkable camouflaged appearance exhibited by these spiders in life. *Phaeacius* shows a typical Indo-Malayan pattern of distribution and consists of eight known species to date.

The genus is a member of the pluridentate salticids characterized by markedly flattened appearance and large posterior median eyes. Chelicera has three promarginal teeth with a gap between apical and subapical tooth. Females are difficult to recognize and their best diagnostic feature is the presence of a patch of fine spatulate setae or clavate hairs on the underside of coxae IV. Males are easily distinguished by the presence of a robust RTA and filamentous process M_1, falcate-blunt cymbium, prominent parspendula and dorsolateral apophysis of distal haematodocha.

The cryptic spider *Portia* Karsch, 1878 is considered the closest relative of *Phaeacius* in the subfamily Spartaeinae.

Phaeacius mainitensis new species

(Fig. 16a–f)

Description:

Male: Total length 7.9 mm. Cephalothorax 3.70 mm long, 2.80 mm wide, 2.00 mm high. Abdomen 4.20 mm long, 1.80 mm wide, 1.50 mm high. Cephalothorax reddish brown, bordered with white on lateral margins and possessing black eye margins. Ocular area has a pair of black longitudinal bands running between AE and PME rows. White hairs present on both lateral areas of each AE, inner and outer margins of PME and outer sides of PLE. Fovea long and dark brown, in a moderately deep groove posterior of PLE. Eye row length (mm): AE = 1.95, PLE = 1.80, PME = 1.65. Eye diameter (mm): AME = 0.55, ALE = 0.28, PME = 0.20, PLE = 0.30. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.12, ALE–PME = 0.35, PME–PME = 1.30, PME–PLE = 0.45, PLE–PLE = 1.30. Clypeus height small and as long as AME separation. Sternum yellow and oblongate, longer than wide (1.5 : 1.0 mm) with truncate anterior end and rounded posterior end. Labium slightly longer (0.50 mm) than wide (0.43 mm), dark brown except yellow anterior. Maxillae similar in color to labium, lateral sides nearly straight except enlargement in outer posterolateral one third. Scopulae present, apical set longer than the inner set of scopulae. Chelicerae brown, robust and bear three promarginal and three or four retromarginal teeth. Midprolateral tooth large and closer to basal tooth than to the apical tooth. Retrolateral teeth close to each other. Legs yellowish brown without bands, long, slender and spinous. Venter of tibia I with seven (1-1-2-1-1-1) spines and metatarsus I with five (2-2-1) ventral spines. Leg formula 4213. Pedipalp as long as combined length of femur I and patella I. RTA with two processes, a well

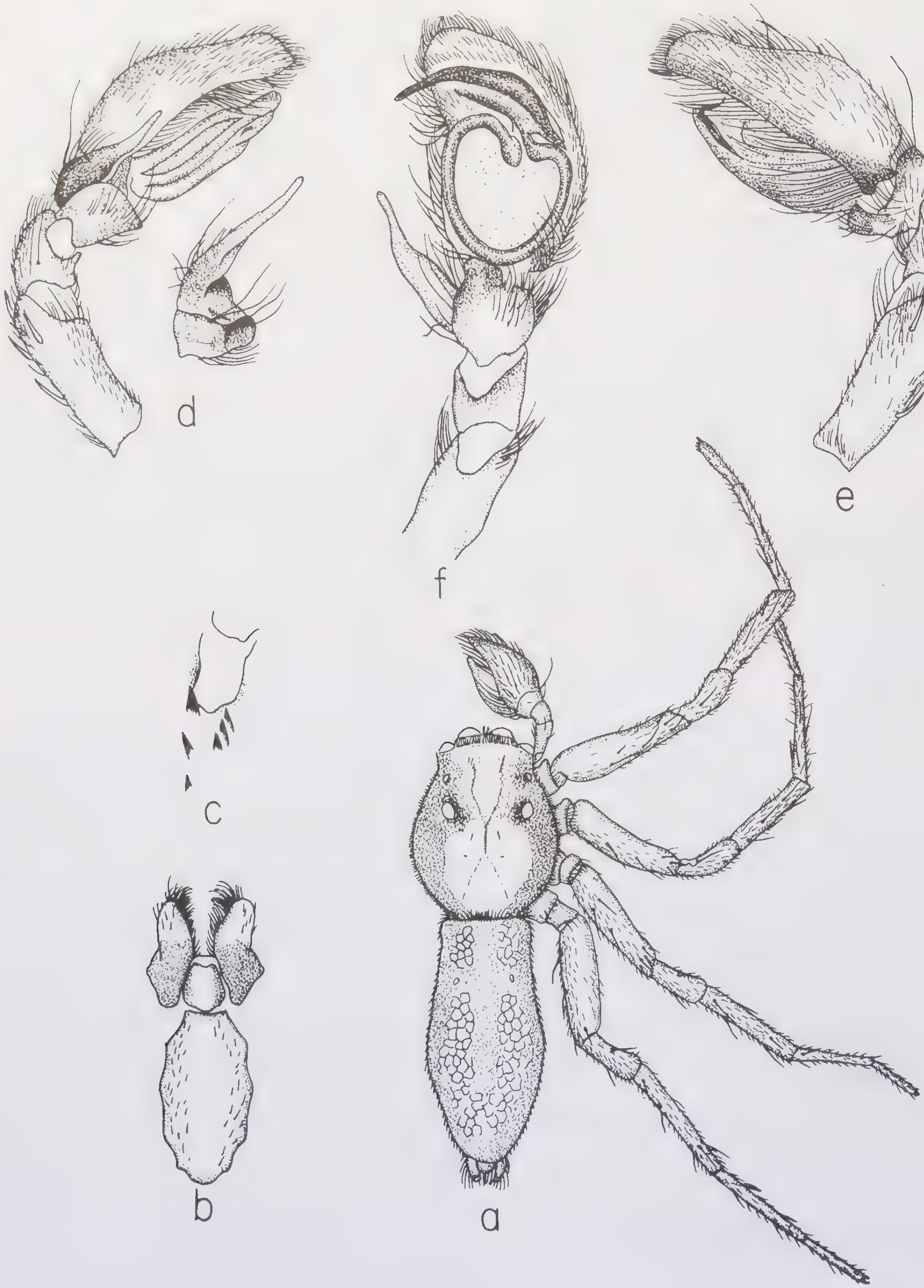

Fig. 16. Male *Phaeacius mainitensis* n. sp., body (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and lateral (de) and ventral (f) views of pedipalp.

sclerotized but bluntly rounded dark brown ventral structure, and a long, yellow, slightly sinuate apophysis almost reaching midlength of cymbium. Left embolus set clockwise, short, heavily built, and emanates from left lateroapical part of tegulum. Ejaculatory duct lines the right lateral side of tegulum. Cymbium moderately oblique apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.05	2.25	2.05	0.75	8.60
2	2.40	1.15	2.30	2.00	0.80	8.65
3	2.20	1.00	2.20	2.15	0.60	8.15
4	2.60	1.00	2.50	2.55	0.90	9.55
Pedipalp	1.15	0.50	0.35	–	1.55	3.55

Abdomen yellowish white except brown lateral and anterior margins with a dense row of short brown hairs with white hairs interspersed. Venter brown except yellow laterally, median area with two longitudinal yellow lines. Posterior pair of spinnerets yellow, basal segments each with two long white hairs in the outer lateral margins, total length longer than the short but robust anterior pair.

Etymology: Named after the type locality.

Natural history: The holotype male was handpicked from bund rice stubbles of upland rice in October.

Material examined: **PHILIPPINES:** *Palawan Is.*, Palawan Prov., Brookes Pt., Mainit Vill., holotype male, 2 October 1987, A.T. Barrion.

Distribution: Philippines.

Genus *Emathis* Simon

Hasarius Thorell, 1890. Ann. Mus. Stor. Nat. Genova 2(10):170.

Emathis Simon, 1899. Ann. Soc. Ent. Belg. 43:108.

This small Oriental and Neotropical genus comprises eight species, of which three are from Sumatra and Borneo including the type species *E. weyersi* Simon 1899. Zabka (1985) pointed out the difficulty of verifying the five Neotropical species at present but stressed that the distribution pattern suggests separate genera for these species.

Members of the genus are small to moderately large spiders with high, thickset, and square-built cephalothorax usually longer than the abdomen. Eye region bears sparse hairs and bristles. Width of eye field I greater than its length and almost as long as width of eye field III. Chelicerae moderately robust, usually orange-brown similar to maxillae and labium. Sternum yellowish brown. Abdomen distinctly marked with spots and stripes posteriorly. Spinnerets yellow. Epigyne poorly sclerotized with coiled translucent canals internally and large spermathecae (in *Emathis weyersi* Simon). Legs relatively long, whitish yellow with orange-brown hairs and brown spines.

Emathis astorgasensis new species
(Fig. 17a–k)

Description:

Male: Total length 9.66 mm. Cephalothorax 4.33 mm long, 3.50 mm wide, 2.50 mm high. Abdomen 5.33 mm long, 2.5 mm wide, 2.5 mm high. Carapace reddish brown except black margins of posterior eyes and white hairs around anterior eyes slightly depressed dorsoventrally above fovea between PLE, steeply sloping when viewed laterally at about 60° angle in the posterior one fourth of cephalothorax. Eyes rows (mm) AE (2.90) > PLE (2.8) > PME (2.50). Eye diameters (mm): AME (1.24) > PLE (0.54) > ALE (0.50) > PME (0.13). AME separation one sixth PLE diameter, AME–ALE separation twice AME separation, PLE separation six times eye diameter. Clypeus height one fourth AME diameter. Sternum brown, longer (1.64 mm) than wide (1.04 apical margin shorter than base of labium, basal margin narrowed and indented between coxae III and IV. Labium slightly broader than apex of sternum, notched laterally on basal one-third. Maxillae twice as long as broad, indented nearly at midlength, broad apically with scopulae in the inner and apical margins. Chelicerae reddish brown, with two promarginal and five contiguous retromarginal teeth. Legs yellow except apical part of femora, entire tibia and metatarsi of I and II known, spination formula on tibia I = 0-6-3-2 and metatarsus I with eight ventral spines, tibia IV = 4-3-3-3 and metatarsus IV = 4-4-2-2, leg formula 1234.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.12	2.20	2.80	2.16	1.16	11.44
2	2.72	1.72	2.16	1.80	0.96	9.36
3	2.60	1.72	2.20	1.68	1.00	9.20
4	2.44	0.92	1.80	2.08	1.04	8.28

Palps with tibial apophysis curved partially inwards and as long as diameter of tibiae, femora with three dorsal spines, each cymbium nearly as long as combined length of the patella and tibia. Abdomen ovoid light brown dorsally, pale yellow apically and laterally, clothed with a few white and brown hairs. Venter yellow with two parallel longitudinal rows of grayish bands, anal area white. Spinnerets yellow-brown, subequal in length.

Female: Total length 13.16 mm. Cephalothorax 5.66 mm long, 1 mm wide, 2.66 mm high. Abdomen 7.5 mm long, 5 mm wide, 4.16 mm high. Cephalothorax as in male with black eye margins, ocular quadrangle with white hairs and occupies just over one third length of carapace, AE rimmed by white hairs, fovea black borne on a depressed area between PLE. Eye row length (mm): PLE (3.38) > AE (3.20) > PME > (2.85). Eye diameters (mm): AME (1.05), ALE (0.58), PLE (0.60), PME (0.13). PLE and ALE borne on small tubercle. AME separation one eighth AME diameter. AME–ALE separation twice AME separation. PME separation

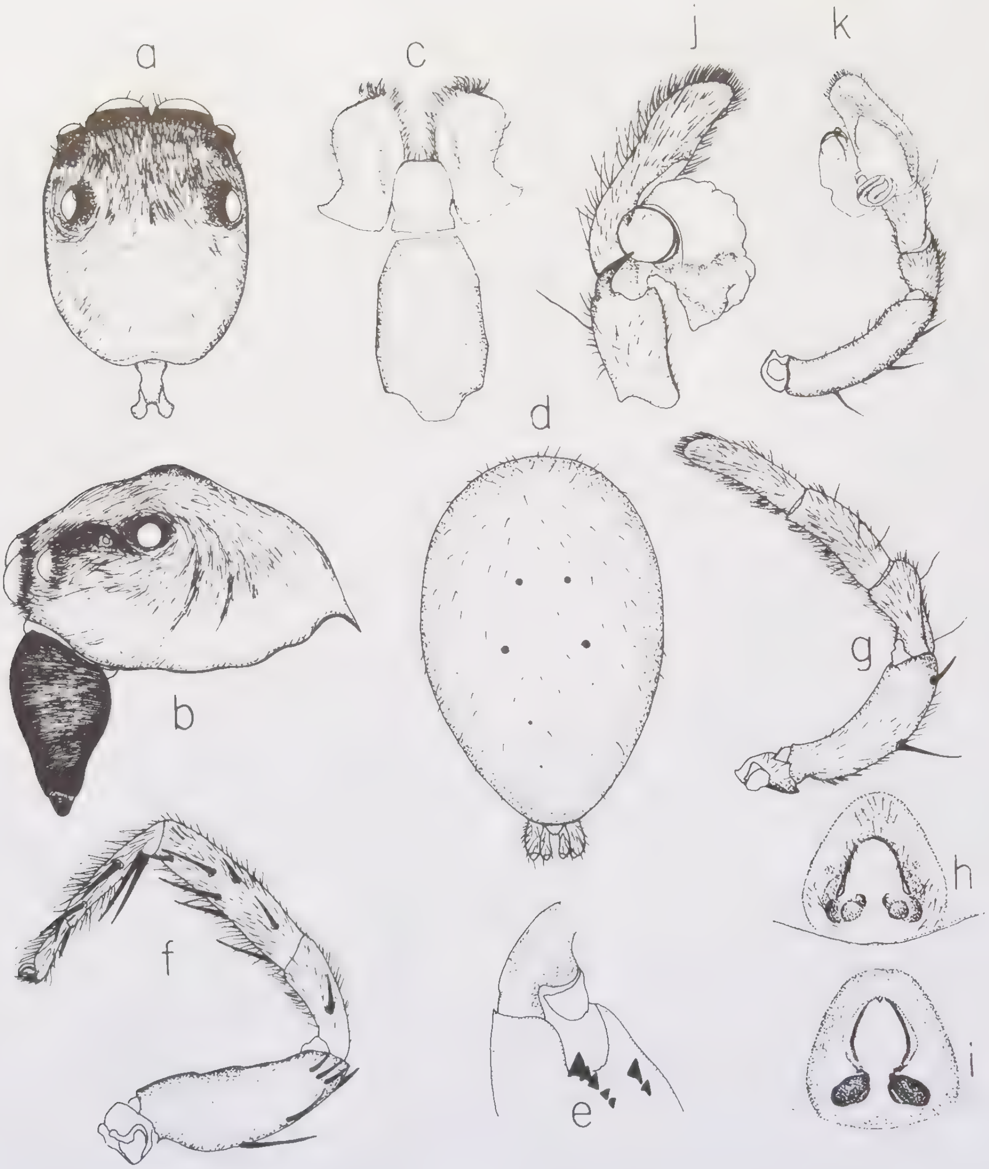

Fig. 17. Female *Emathis astorgasensis* n. sp. dorsal (a) and lateral (b) views of cephalothorax; sternum, labium, and maxillae (c); dorsum of abdomen (d); cheliceral teeth (e); leg I (f); pedipalp (g); dorsal (h) and ventral (i) views of epigynum; and male's pedipalps showing tibia and tarsus (j) and entire palp (k).

nearly three times AME diameter, PLE diameter half AME diameter. Clypeus concave, narrowest anterior of AME, height one fourth AME diameter. Sternum much longer (1.88 mm) than broad (1.08 mm), widest between coxae III and IV, truncated apically and shorter than basal width of labium. Legs as in male except lengths. Tarsus IV longer than III and III longer than I. Leg formula 4123.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	2.28	2.88	2.32	1.20	11.68
2	3.00	2.00	2.44	2.08	1.12	10.64
3	3.00	1.56	2.16	2.44	1.24	10.40
4	4.20	2.08	2.68	2.68	1.40	13.04

Palps brown except yellow femur with two dorsal spines each, tibiae as long as tarsi. Abdomen similar to male. Epigynum dome-shaped with an incomplete orifice and diverging spermathecae.

Etymology: Name derived from the type locality.

Natural history: Specimens were collected in February from the spirally rolled foliage of 1.5 m tall dryland rice. The rolled leaf served as a retreat shelter for *E. astorgasensis*.

Material examined: PHILIPPINES. *Panay Is.*, Capiz Prov., Dumarao, Astorgas, holotype male and paratype female, 16 February 1981, A.T. Barrion.

Distribution: Philippines.

Remarks: The species described here is similar to *E.*

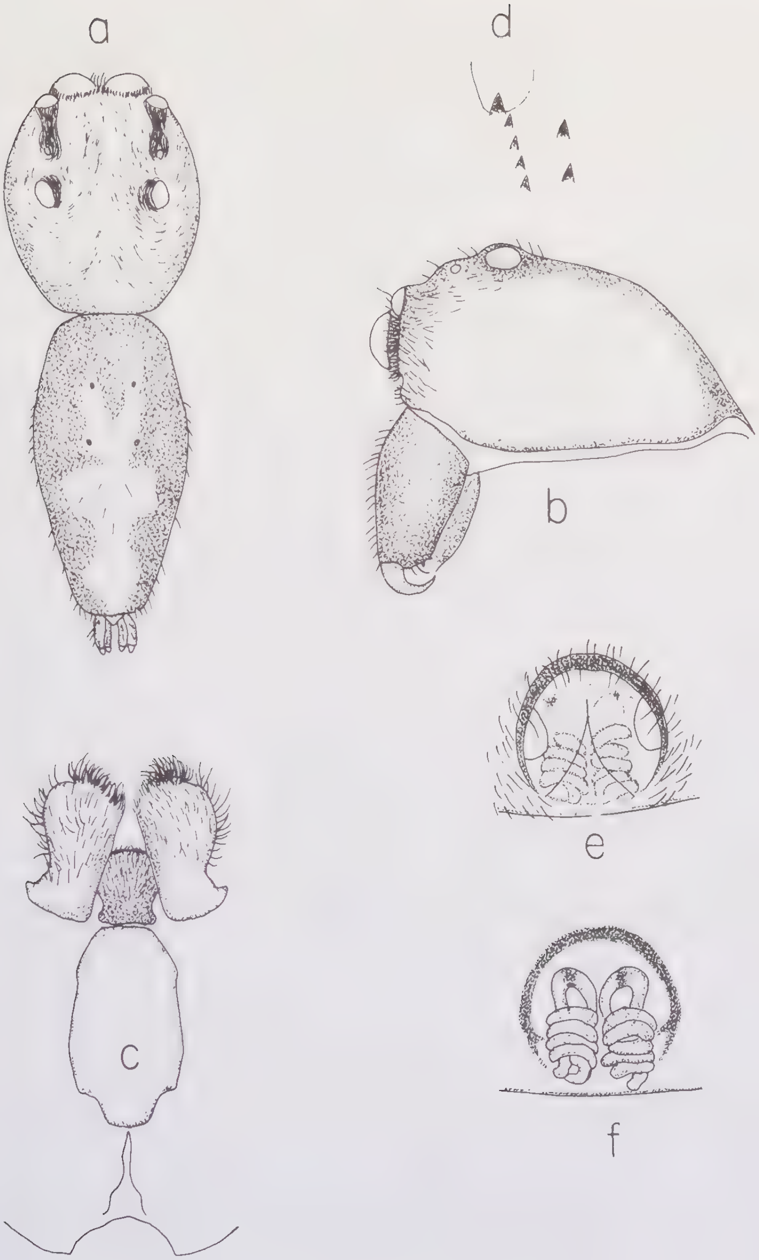

Fig. 18. Female *Emathis makilingensis* n. sp., (a); lateral view of cephalothorax (b); sternum, labium, and maxillae (c); cheliceral teeth (d); and dorsal (e) and ventral (f) views of epigynum.

weyersi Simon but is larger, lacks a color pattern, and differs in genitalia details.

Emathis makilingensis new species
(Fig. 18a–f)

Description:
Female: Total length 11.49 mm. Carapace 5.16 mm long, 3.92 mm wide, 2.48 mm high. Abdomen 6.33 mm long, 3.16 mm wide, 2.96 mm high. Cephalothorax light reddish brown except black eye margins of PE, yellow posterior to short fovea, sloping on basal one third at about 50° angle, eye clothed with white hairs. Ocular area 0.44 length of carapace. Eye diameters (mm): AME = 1.03, PLE = 0.61, ALE = 0.50, PME = 0.13. AME separation almost half PME diameter. AME–ALE separation 0.36 times ALE diameter. PME separation five times ALE diameter. PLE separation 3.7 times PLE diameter. Clypeus height one third AME diameter. Sternum almost rectangular except the narrow truncated apex and indented margins opposite coxa IV, anterior end narrower (0.52 mm) than base of labium (0.60 mm). Chelicerae reddish brown with five retromarginal and two promarginal teeth. Labium and maxillae reddish brown, labium longer (1.00 mm) than wide (0.68 mm), narrowed and bluntly rounded apically, notched in basal one third and broadest basally, height ca. three fourths

of maxillae. Maxillae longer than wide and much broader apically than proximally, scopulae and serrula brown. Legs brown-yellow with stout femora I–II, and femur III slightly stout towards apical one third, apex of femur I with five spines of which two are in the dorso-apical half. Tibial spination formula I and II = 0-6 (2-2-2)-3-2; III and IV = 1-3 (1-0-2)-3-3, spination in metatarsus I and II = 0-8 (2-2-2-2)-0-0, III = 0-4 (2-0-2)-3 (1-0-2), IV = 0-4 (2-0-2)-4 (1-1-2)-4 (1-1-2). Tarsi I, II, and IV equally long. Tarsi two-clawed with three to 22 teeth in each claw. Leg formula 3142. Labial palp yellow except brownish tarsus, femur with three dorsal spines, tibia 1.5 times length of tarsus.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.11	2.11	2.94	2.05	1.11	11.32
2	2.91	1.72	2.22	1.72	1.11	9.68
3	3.77	1.88	2.44	2.61	1.22	11.92
4	3.16	1.33	2.22	2.50	1.11	10.32

Abdomen tapers posteriorly with a yellow folium extending from cardiac area to the anal tubercle, margins of folium yellowish brown, venter yellow with sparse long brown hairs. Spinnerets brown, anterior pair slightly longer than posterior, diameter of the latter nearly twice that of anterior. Epigynum a spherical plate with faint, inverted V-shaped mark posteromedially and shallow depression along lateral margins.

Etymology: Name derived from the type locality.

Natural history: A female specimen was collected in August from a small palm plant with its leaf damaged by leafrollers. The small palm was interpersed with 220 m^2 upland rice grown at about 225 meters above sea level.

Material examined: **PHILIPPINES:** *Luzon Is.*, Laguna Prov., Los Baños, Mt. Makiling, holotype female, 13 April 1977, C. de Castro.

Distribution: Philippines.

Remarks: The newly described species is much darker than related species and has a distinctive color pattern.

Genus *Myrmarachne* Macleay

Myrmarachne MacLeay, 1839. Ann. Nat. Hist. 2:10.

Ant-like salticids with long and narrow cephalothorax (only slightly more than half as wide as long). Cervical groove well developed and the flat cephalic area is usually much higher than the steeply sloping to convex thoracic area. Ocular quadrangle nearly as long as broad. Sternum usually lanceolate and about three times as long as broad, apical end truncate and posterior end sharply pointed anterior of coxae IV. Chelicerae with several teeth in the retromargin, male chelicerae strongly developed. Pedicel visible from above. Abdomen elongate to ovate with a transverse depression in the male, dorsal scutum present in both sexes. Tibia and tarsus of male pedipalp swollen.

These spiders actually mimic ants and are usually observed mingling with ants. The genus occurs throughout the tropics, and it is one of the most abundant among the salticids, comprising some 200 species.

Myrmarachne bidentata Banks
(Fig. 19a–f)

Myrmarachne bidentata Banks, 1930. Psyche 37(3): 209.

Redescription:

Male: Total length 7.55 mm. Cephalothorax 4.25 mm long, 2.30 mm wide, 2.00 mm high. Abdomen 3.30 mm high, 2.20 mm wide, 2.00 mm high. Cephalothorax dark reddish brown with black eye margins, moderately long and thin white hairs along clypeus, around anterior eyes, PLE, between PME and PLE, and on sides of cephalic area. Midclypeus posterior of AME with three long uncurved hairs. Cephalic area flat dorsally, drops slightly posterior of PME producing a wide groove with two long yellow hairs, total length equal to or slightly longer than the strongly convex thorax, height more than thorax (1.95 : 1.75 mm). In side view, cephalothorax bears two broad transverse grooves, the first occurs posterior of PLE and the second in the thoracic posterior. Eye diameter (mm): AME = 0.65, PLE = 0.39, ALE = 0.35, PME = 0.10. Eye separation (mm): PLE–PLE = 1.83, PME–PME = 1.73, PME–ALE = 0.40, PME–PLE = 0.38, ALE–AME = 0.10, AME–AME = 0.06. Length of eye rows (mm): PLE row = 2.28, AE = 2.10, PME = 1.86. Clypeus height very small, a little longer than AME separation. Sternum smoothly red-brown, three times longer (2.10 mm) than wide (0.68 mm), margins not clearly rebordered, anterior end narrowly truncate, indention opposite coxae II shallowly biconcave with a 'tooth' in the middle and its anterior and posterior arms extended to carapace, posterior end of sternum moderately pointed anterior of touching coxae IV. Labium and maxillae dark reddish brown. Labium with pale yellow apex, longer (0.90 mm) than wide (0.50 mm), and narrowly truncate posteriorly. Maxillae similar to *M. pinakapalea* n. sp. except for a slender internal groove housing labium and a more diverging apical half. Chelicerae dark reddish brown, as long as abdomen, outer margin with two equally spaced teeth, posterior tooth thinner than the anterior. Promargin with five teeth, apical tooth the largest, second apical tooth closer to first than to third, and the fifth tooth forms a close triangle with the sixth and seventh teeth of retromargin with 14 teeth. Fang toothless, slightly curved in the apical third. Legs dark brown except yellow tarsi of legs II, III, and IV, and most of coxa I. Femora I with one dorsal spine. Tibia I with 12 (2-1-1-1-1-1-1-2-2) and II with six (2-2-2) ventral spines. Apex of apical three fourths of tibia I with a long hair, twice the diameter of tibia at that point. Metatarsi I and II with four (2-2) ventral spines each. Leg formula 4132. Pedipalp dark brown except yellowish trochanter. Tibia ventrally

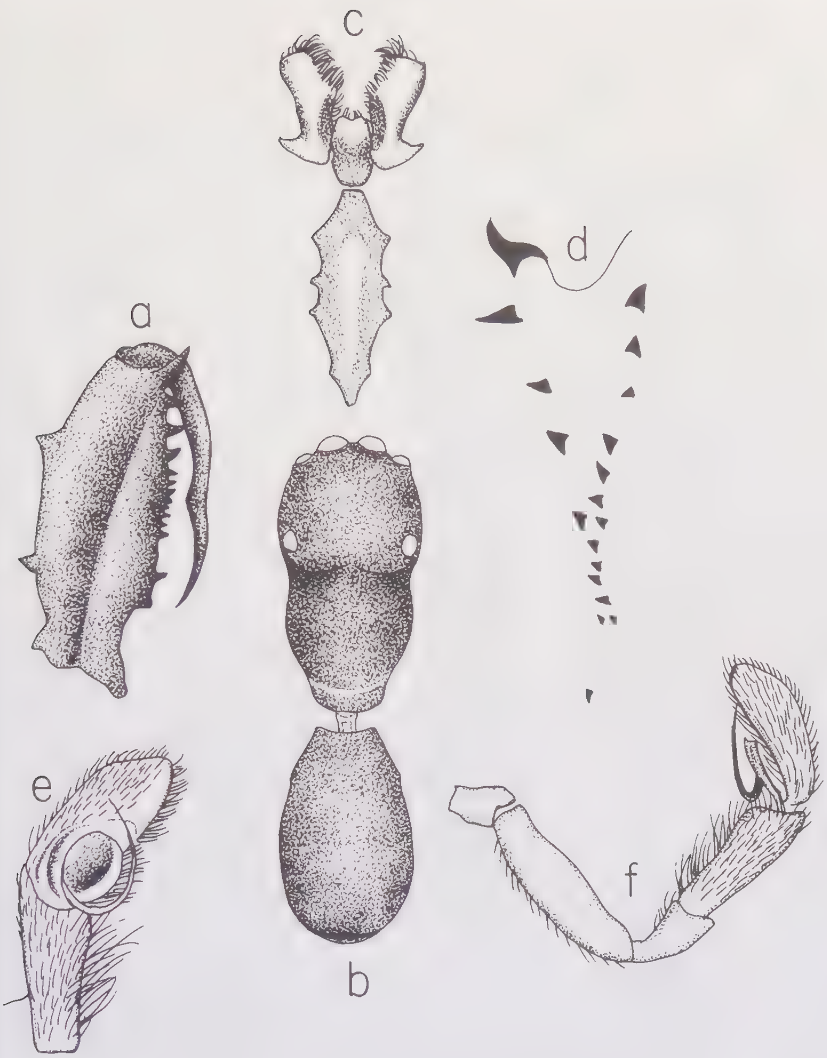

Fig. 19. Male *Myrmarachne bidentata* Banks, left chelicera (a); body (b); sternum, labium, and maxillae (c); cheliceral teeth (d); tibia and tarsus of pedipalp (e); and entire pedipalp (f).

hirsute, RTA moderately small but present, about as long as basal diameter of patella, right embolus long and circles the tegulum twice counterclockwise. Apex of cymbium with two spines of unequal diameter, the longer one much thinner than the shorter one.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.75	1.20	3.30	1.45	0.70	9.40
2	2.25	0.95	1.90	1.20	0.50	6.80
3	2.35	1.05	1.80	1.75	0.60	7.55
4	3.45	1.10	2.90	2.70	0.75	10.90
Pedipalp	1.05	0.53	0.71	–	0.88	3.17

Abdomen moderately oblong without constriction, one third longer than broad and widest medially, dull brown uniformly covered with short light brown and long brown hairs. Anterior end truncate to slightly concave, posterior end without any visible division. Venter black from epigastric furrow to spinnerets with a brown rectangular band before the spinnerets. Anterior spinnerets much broader than the posterior pair.

Natural history: The single male specimen was collected from the pods of bush sitao, a *Vigna* sp. growing on the levee of a ricefield, in November.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Pila, 4.6 km NW of town proper, one male, 10 November 1979, A.T. Barrion.
Distribution: Philippines.

Myrmarachne markaha new species
(Figs 20a–h, 21a–h)

Description:
Male: Total length 5.76 mm. Cephalothorax 2.41 mm long, 1.41 mm wide, 0.95 mm high. Abdomen 3.35 mm long, 1.00 mm wide, 0.80 mm high. Cephalothorax dark brown with moderately thick, white and flatly set hairs, and sparse but long yellow hairs; cephalic area black, flat dorsally with silvery appearance, and more hirsute than the convex brown thoracic area. Constriction between cephalic and thoracic areas wide, middorsally with two

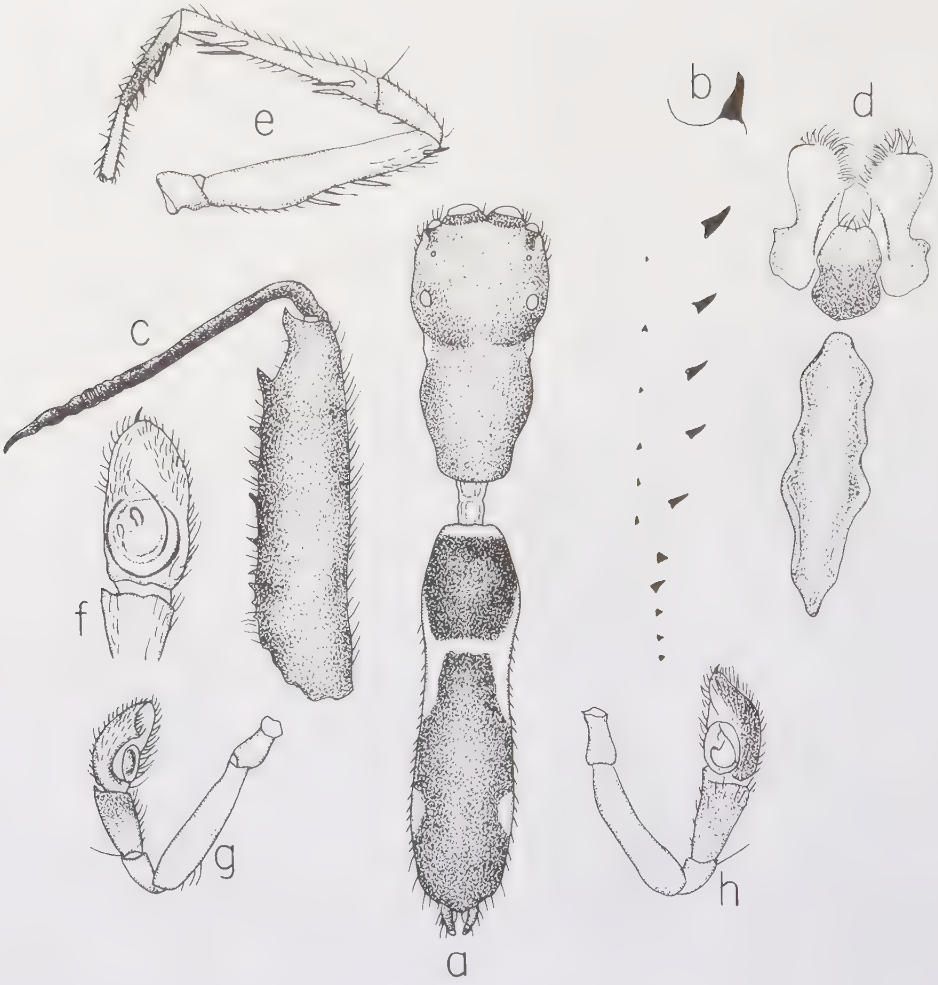

Fig. 20. Male *Myrmarachne markaha* n. sp., holotype body (a); cheliceral teeth (b); right chelicera (c); sternum, labium, and maxillae (d); leg I (e); tibia and tarsus of pedipalp (f); and lateral (gh) views of entire pedipalp.

pairs of long hairs and with a thick mass of white hairs in the constriction touching lateral edge of carapace. AME surrounded by yellow to white flat hairs and black eye margins. Eye diameter (mm): AME = 0.35, ALE = 0.18, PLE = 0.16, PME = 0.04. Eye separation (mm): PLE–PLE = 0.91, PME–PME = 0.90, PLE–AME = 0.25, PME–ALE = 0.15, ALE–AME = 0.04, AME–AME = 0.03. Length of eye row (mm): PLE = 1.15, AE = 1.10, PME = 0.98. Height of carapace at PLE = 1.00 mm. Clypeus height narrow as long as AME–AME separation. Sternum brownish gray 3.4 times longer than wide (1:30 : 0.38 mm), broadest between coxae I + II and II + III where there are extensions to the carapace, posterior end shortly tapered between coxae IV. Labium black with yellow apex, and middle of sides notched. Maxillae brownish yellow with black areas in the outer posterolateral area, dense scopulae present anterior of inner posterolateral cavity, apex of maxillae truncate, and outer edge of anterolateral half nearly L-shaped. Chelicerae reddish brown, slightly longer (3.5 mm) than fang (3.25 mm) and abdomen (3.35 mm) but 1.5 times longer than cephalothorax. Promargin with a large apical and ten smaller teeth, basal five teeth almost in line with retromarginal teeth, fourth tooth from base slanted and projected anterolaterally. Retromargin bears six minute teeth, much smaller than those in promargin, of decreasing size towards base, apical and subapical teeth widely separated with a moderate concavity in between. Fang longer than cephalothorax, without prominent tooth, apical half with ragged edges, serrated basally on the inner side. Legs yellow with black metatarsi I and gray patches and lateral bands on leg IV. Spination: femora I-IV each with three dorsal setae, patella I with a ventral spine, tibia I = 0-7(2-1-2-2)-0-0, II = 0-2(1-1-0)-0-0. Tibia I with two long erect dorsal bristles towards apex, the longest bristles slightly shorter than the patella bristle. Leg formula 4132. Pedipalp yellow to grayish brown, longer than all femora, inner part of tibia with a moderately dense mat of hairs reaching cymbium. RTA small, bluntly rounded and projected laterally in dorsal view becoming parallel to a minute basodorsal spur of cymbium. Base of cymbium in ventrolateral view bears two long brown hairs, apex obliquely truncate with a spine. Right embolus twice circled the tegulum counterclockwise.

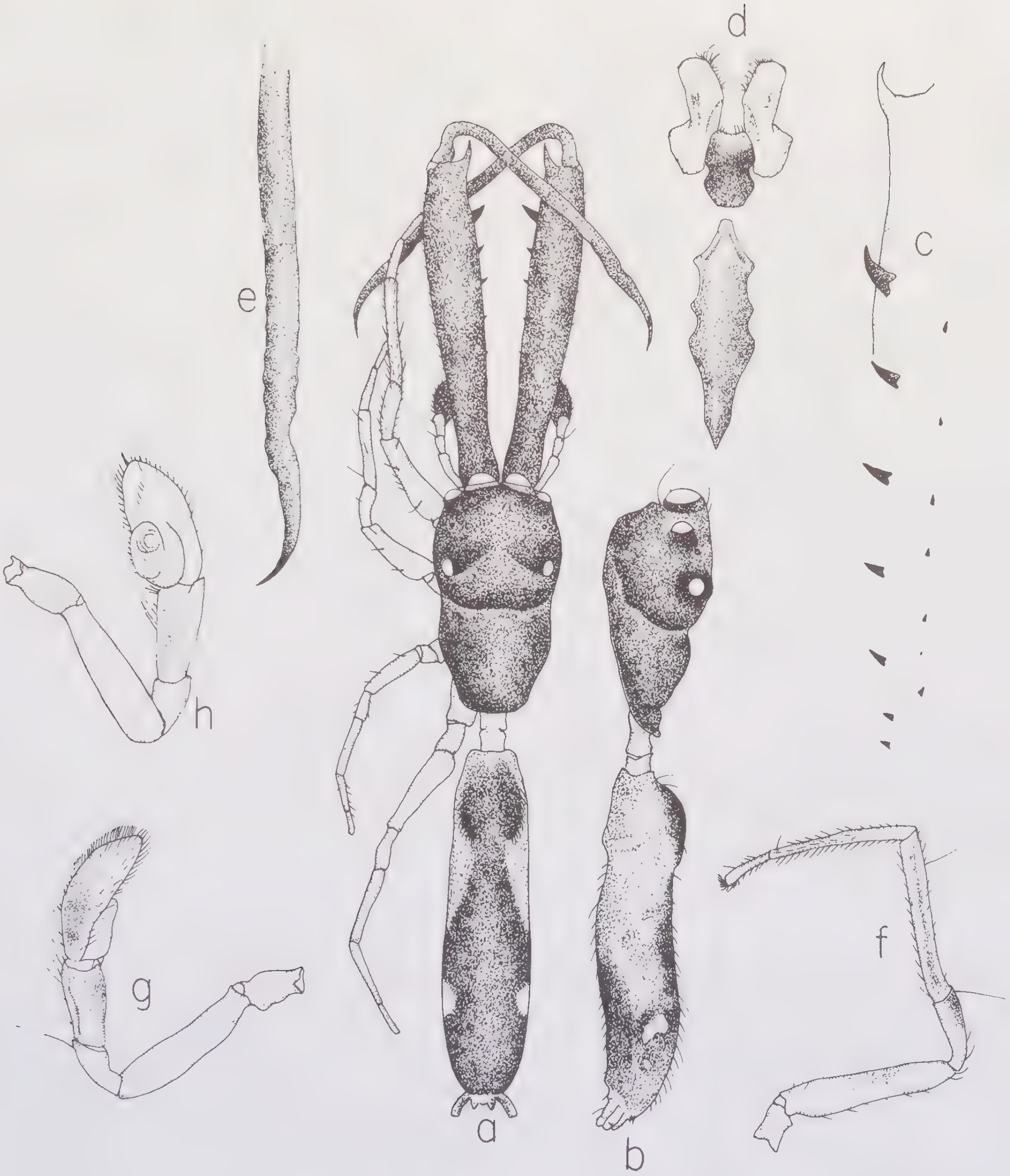

Fig. 21. Paratype male *M. markaha* n. sp., dorsal (a) and lateral (b) views of body; cheliceral teeth (c); sternum, labium, and maxillae (d); fang (e); leg I (f); and lateral (g) and ventral (h) views of pedipalp.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.40	0.65	1.28	0.73	0.44	4.50
2	1.00	0.48	0.88	0.60	0.33	3.29
3	0.98	0.43	0.75	0.83	0.35	3.34
4	1.43	0.58	1.29	1.13	0.36	4.79
Pedipalp	0.53	0.23	0.30	–	0.46	1.52

Pedicel highly visible, apical and basal segment of equal length. Abdomen dark brown to black with a yellow H-shaped band dorsally, strongly convex in apical one third forming a transverse constriction posterior of the convex plate, posterior one third with a dense mat of white hairs midlaterally. Venter with a long brown median band running from the epigastric furrow to the spinnerets, lateral margin yellow with a deep longitudinal groove. Spinnerets black, except apical yellow-brown segment of anterior pair.

Etymology: Specific epithet taken from the H-shaped

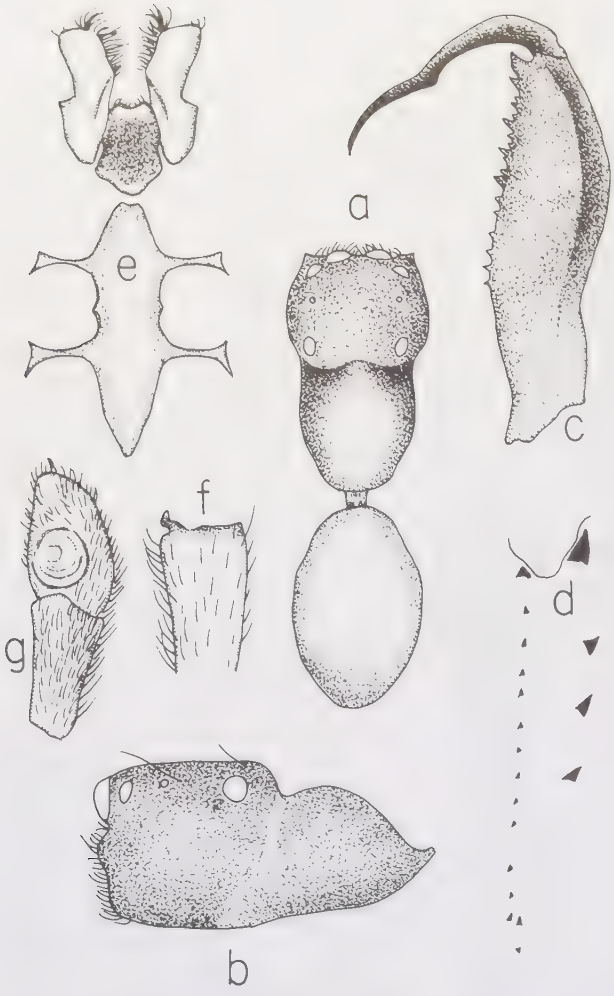

Fig. 22. Male *Myrmarachne pinakapalea* n. sp., body (a); side view of cephalothorax (b); chelicera (c); cheliceral teeth (d); sternum, labium, and maxillae (e); tibia showing RTA (f); and tibia and tarsus of pedipalp (g).

pattern of abdomen in Tagalog ('marka' + 'Ha').

Natural history: The holotype single male was collected by sweep net in upland rice in July and a paratype male was isolated from kerosene light trap (KLT) catches in upland rice in August.

Material examined: PHILIPPINES: *Mindanao Is.*, Agusan del Sur Prov., Del Monte, holotype male, 12 July 1979, A.T. Barrion; *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., one paratype male, 16 August 1984, M. Perez.

Distribution: Philippines.

Remarks: The paratype male has a slightly longer body than the holotype, different teeth and abdominal pattern, number of ventral spines in tibia I, and more curved and sharper tip of fang (Fig. 21a–h). At the present time, this is only considered to be individual variation.

Myrmarachne pinakapalea new species
(Fig. 22a–g)

Description:

Male: Total length 5.85 mm. Cephalothorax 3.20 mm long, 1.80 mm wide, 1.50 mm high. Abdomen 2.65 mm long, 1.88 mm wide, 1.65 mm high. Cephalothorax blackish brown in the cephalic and reddish brown in the thorax, both covered with short white hairs but eye field with 12 long hairs – six in two transverse rows of four and two posterior of AE row, four in one transverse row just posterior of PME row, and two in a transverse row between PME, slightly dorsad of the constriction just posterior to the cephalic area. Eye margins black circled with white hairs, thicker and longer white hairs in the clypeus and around AME, midclypeus with three moderately long upcurved whitish yellow hairs. Cephalic area flat on top distinctly longer than the strongly convex to rounded thorax, and much higher (by 0.44 mm) compared to the latter. Eye diameter (mm): AME = 0.48, ALE = 0.23, PLE = 0.21, PME = 0.06. PLE distinctly lower than the tubercle. Eye separation (mm): PLE = 1.28, PME = 1.18, PME–PLE = 0.48, PME–ALE = 0.33, ALE–AME = 0.06, AME–AME = 0.05. Length of eye row (mm): PLE = 1.49, AE = 1.35, PME = 1.25. Clypeus height very small, barely 0.1 AME diameter. Sternum brownish red and smooth, longer (1.63 mm) than wide (0.55 mm), lateral margins with long extensions to carapace between coxa I–II and II–III with straight edges except biconcave opposite coxa II, lateral margin opposite coxa I strongly rebordered, apex narrowly truncate and posterior end sharply tapered in front of coxae IV, which are touching each other. Labium reddish brown with yellow concave apex, median lateral constriction present, and posterior end narrowly truncate. Maxillae light reddish brown becoming yellow on inner margin near yellow scopulae, lower inner part concave to house labium, outer midhalf distinctly constricted for the pedipalp (somewhat L-shaped). Chelicerae long, similar in color to sternum, apical half more robust than the basal half, total length nearly as long as cephalothorax. Promargin with four teeth, apical tooth the largest and basal three equally spaced in the bottom two thirds of the apical 0.4 of cheliceral length. Retromargin with 15 teeth, apical one the largest, second tooth bifurcate, the rest are evenly spaced in low and high pattern from third to fifteenth. Fang with median blunt tooth, dark reddish brown in the basal half and brown in the apical half, venter of apical half serrated with at least 82 teeth. Legs long and slender, brownish yellow, leg I with yellowish patella and apex of tibia darker than the rest, coxae III swollen mesobasally, trochanter IV mostly yellowish and with black lateral bands. Femora I club-like, basal one fourth much more swollen than the apex and has one dorsal spine in posterior one fourth similar to femora II, III without dorsal spine and IV with two in basal two thirds. Tibiae I and II bear an erect dorsal hair in the basal part of apical one fifth of their length; tibia I has nine (2-2-2-2-1) ventral spines, and tibia II has three (1-2). Metatarsi I and II each with four (2-2) ventral spines, stronger than those in the tibiae. Leg formula 4132. Pedipalp yellow-brown with dark brown posterior half of cymbium. Patella + tibia longer than femur, and apicodorsal hair of patella as long as ventral length of patella. Tibia nearly twice length of patella, prolateroventral edge covered with moderately dense long hairs which are as long as those arising at base of cymbium, RTA present forming a spirally directed upward process (bent and hooked in dorsal view), apical diameter of tibia almost twice posterior width. Cymbium with an apical spine, apical half obliquely truncate. Embolus long, thin and spiralled, looping tegulum twice. Ejaculatory duct longitudinally S-shaped underneath second loop of embolus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	1.00	2.55	1.35	0.60	8.10
2	1.75	0.80	1.48	1.00	0.50	5.53
3	1.90	0.75	1.45	1.35	0.50	5.95
4	2.85	0.90	2.30	2.00	0.65	8.70
Pedipalp	0.85	0.40	0.70	–	0.65	2.60

Pedicel short but still visible dorsally, apical segment short but more grayish than the yellow second segment. Abdomen ovoid, brown and covered with short and thin white hairs. Venter yellowish medially becoming brown anterior of epigastric furrow, dorsum of abdomen shield-like, ventrolateral edges with six to eight low longitudinal gray ridges. Spinnerets hidden and short, anterior pair seemingly contiguous on the brown basal segment, more robust than the slender posterior pair.

Etymology: Named after distinctly rebordered margin of sternum opposite coxae I in Tagalog ('pinakapal' + ea).

Natural history: The holotype male was taken from a rice leaf feeding on a female planthopper *Sogatella furcifera* (Horvath). In the left chelicera was a crushed nymph of a green leafhopper *Nephotettix* sp.

Material examined: PHILIPPINES: *Luzon Is.*, Pangasinan Prov., Bani, holotype male, 13 October 1982, A.T. Barrion and I. Oferio.

Distribution: Philippines.

Myrmarachne vulgarisa new species
(Fig. 23a–h)

Description:

Female: Total length 5.60 mm. Cephalothorax 2.70 mm long, 1.05 mm wide, 0.85 mm high. Abdomen 2.90 mm long, 1.70 mm wide, 1.60 mm high. Cephalothorax dark reddish brown to black densely covered with white hairs except in the slightly covered inner eye area between second and third eye rows and midjunction of cephalic and thoracic area. Cephalic area flat dorsally, with long hairs on the clypeus and some areas around first eye row and PME, deeply constricted posteriorly, and its total length slightly shorter than the strongly convex and more elevated thoracic area. Anterolateral part of thorax yellow and rest of lateral margins with sclerotized ridge clearly upturned in the posterior most part. Eye diameter (mm): AME = 0.35, PLE = 0.16, ALE = 0.15, PME = 0.06. Eye separation (mm): PME–PME = 0.92, PLE–PLE = 0.88, ALE–PME = 0.23, PME–PLE = 0.20, AME–ALE = 0.05, AME–AME = 0.04. Length of eye row (mm): PLE = 1.20, AE = 1.08, PME = 1.00. Clypeus height very small, barely 0.17 diameter of AME. Sternum dagger-like and gray brown, constricted by the second coxae and tapering toward the posterior between adjacent coxae IV, apical half with small but dense yellow spots and posterior half smooth without yellow pit-like character, narrow and 4.33 times longer (1.43 mm) than wide (0.33 mm). Labium dark reddish brown with about six black hairs, longer (0.70 mm) than wide (0.28 mm), constricted at midlength and obliquely angled in basal one fourth. Maxillae yellow with gray-brown tinge in most parts, markedly constricted in the posterior third of the outer margin, apex made pointed by the yellow-brown scopulae. Chelicerae reddish brown without constrictions and outer teeth, twice longer than broad, promargin with five teeth and six on the retromargin. Legs moderately slender, gray-brown to black with dominant yellow areas on the venter and dorsum of trochanter I, femora I and II, tibia II, metatarsi II, and venter of patella I; coxae I entirely yellow, trochanter IV and patella IV yellow with black rings on both ends; posterior half of femora I to IV stouter than the apical half. Tibia I with nine (2-1-2-2-2) ventral spines and tibia II with six (2-2-2). Metatarsi I and II each with four (2-2) ventral spines. Thin erect setae on tibia I at 0.8 of tibial length. Leg formula 4132. Pedipalp reddish brown except yellow femora, total length more than length of femora IV, patella to tarsus flat dorsally, anterior ends of patella and tibia wider than their bases, tarsus covered with hairs and bears a pair of spines apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.38	0.73	1.29	0.75	0.41	4.56
2	0.93	0.55	0.88	0.55	0.35	3.26
3	1.18	0.53	0.84	0.80	0.41	3.76
4	1.71	0.75	1.35	1.25	0.50	5.56
Pedipalp	0.53	0.29	0.35	–	0.60	1.77

Pedicel visible dorsally, gray and longer than wide, middorsal part with a node-like apically rounded tubercle. Abdomen oblong to subglobular, apical one fifth black and well rounded, appears as a cap of the entire abdomen, posterior four fifths pale brown, with four dorsal small brown spots. Venter pale grayish brown with a pair of slightly concave longitudinal white bands running from epigastric furrow posterior to the spinnerets, apical part band wider than the fading posterior part. Spinnerets gray brown with yellow tinge and a black spot on the apex of posterior pair, slightly robust anterior pair close to each other basally, and as long as the posterior spinnerets. Epigynum with three white cir-

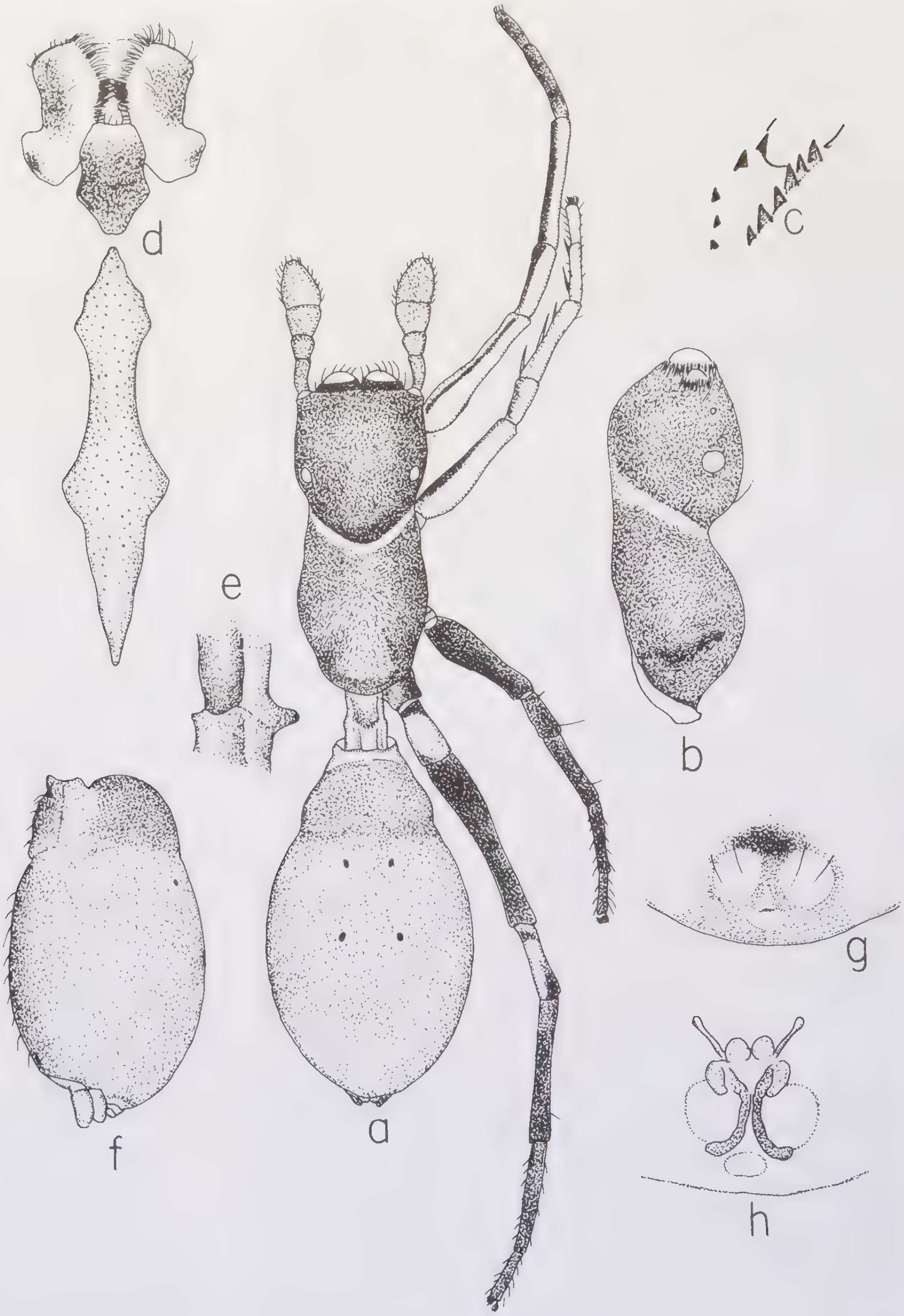

Fig. 23. Female *Myrmarachne vulgarisa* n. sp., (a); side view of cephalothorax (b); cheliceral teeth (c); sternum, labium, and maxillae (d); pedicel (e); side view of abdomen (f); and dorsal (g) and ventral (h) views of epigynum.

cular rings arranged triangularly, anterior pair much wider than the posterior one, internal structures simple with diverging arms anteriorly and posteriorly.
Etymology: Named after the host where it was collected.
Natural history: A single female specimen was vial-tapped from a weed *P. vulgaris* growing in irrigated rice, in August.
Material examined: PHILIPPINES: *Luzon Is.*, Nueva Ecija Prov., Guimba, 18 km NE of town proper, holotype female, 7 August 1987, A.T. Barrion.
Distribution: Philippines.

Myrmarachne caliraya new species
(Fig. 24a–i)

Description:
Male: Total length 6.40 mm. Cephalothorax 3.60 mm long, 2.35 mm wide, 2.60 mm high. Abdomen 3.30 mm long, 2.45 mm wide, 2.70 mm high. Cephalothorax reddish brown becoming dark reddish brown in the cephalic area; dorsally covered with moderately short white hairs; long brown setae present with one each near PME, one pair each in between PLE and ALE rows. CL/CW = 1.53. Cephalic area (1.95 mm) longer than thoracic area

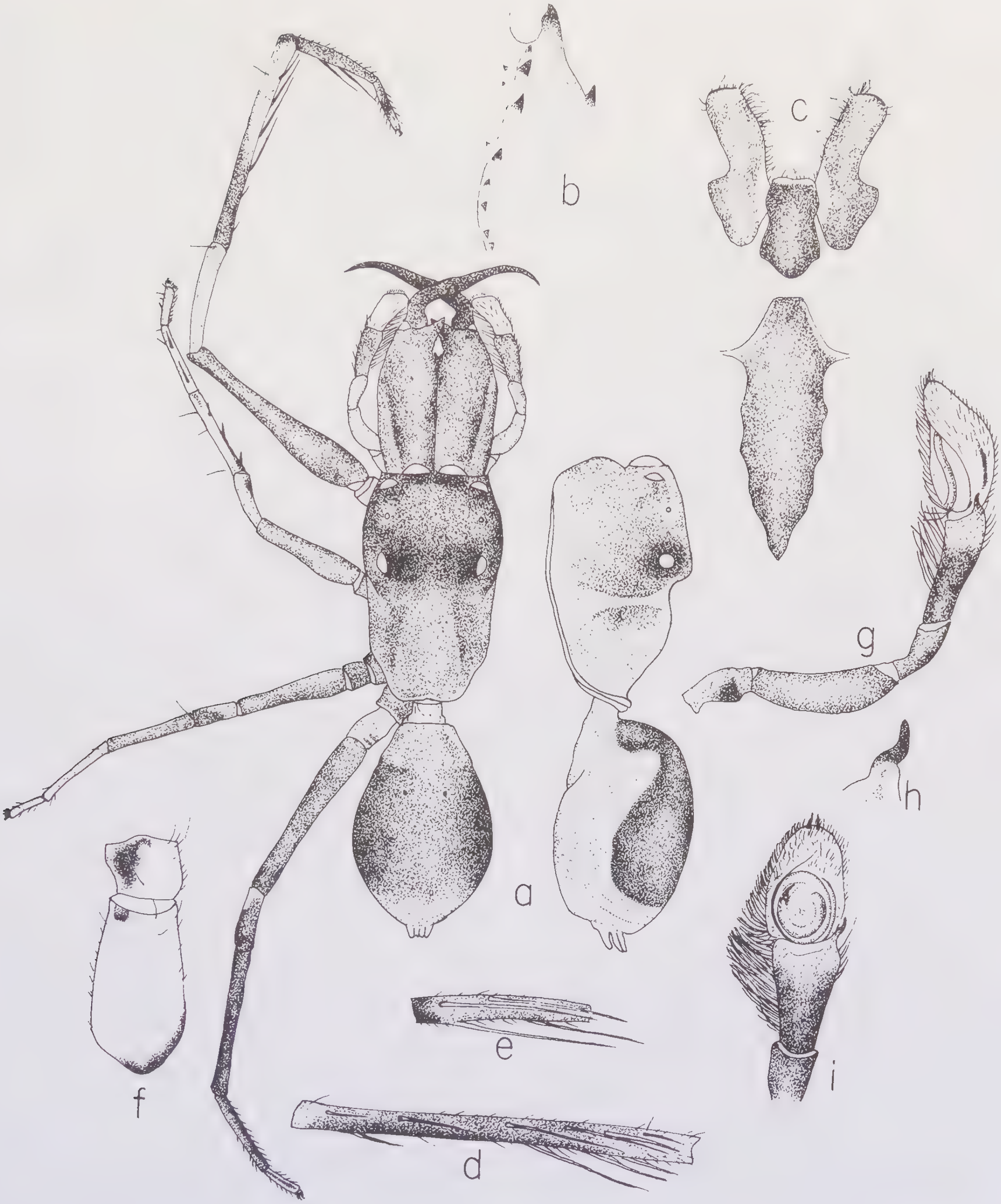

Fig. 24. Male *Myrmarachne caliraya* n. sp. in dorsal (left) and lateral (right) view (a); cheliceral teeth (b); sternum, labium, and maxillae (c); venter of tibia I (d) and metatarsus I (e); coxa and trochanter of leg I (f); retrolateral view of pedipalp (g); apex of RTA (h); retrolateral view of pedipalp (g); apex of RTA (h); and ventral view of pedipalp's patella, tibia, and tarsus (i).

(1.65 mm), the former flat dorsally in the ocular area except lateral bulges between ALE and PLE, and thoracic area moderately convex. In lateral view, two depressions visible, the separation between cephalic and thoracic areas and near the posterior edge of the thorax. Eye diameter (mm): AME = 0.48, ALE = 0.25, PME = 0.06, PLE = 0.28. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.09, ALE–PME = 0.44, PME–PME = 1.38, PME–PLE = 0.48, PLE–PLE = 1.53. Length of eye row (mm): AE = 1.63, PME = 1.45, PLE = 1.81. Clypeus height small, one fifth ALE diameter, and convex in the middle. Sternum brown, longer than wide (1.7 : 0.8 mm), broadest between coxae I and II with extension to the sides of carapace, anterior end truncate, posterior end moderately tapered before coxae IV. Labium dark reddish brown, twice longer than wide, truncate apical end yellow with about 15 black setae, grooved before margins, base bluntly pointed in the middle and positioned lower than the base of maxillae. Inner middle part maxillae reddish brown, concave with dense scopulae, apex truncate to rounded, and midhalf of outer lateral margin strongly indented. Chelicerae robust, somewhat triangular, total length longer than cephalic area and a little shorter than tibia IV. Promargin with ten teeth, two dorsoprolateral (a strong apical one close to base of fang and a smaller one in the apical third) and eight smaller ventroprolaterals (apical tooth close to base of fang smaller than the next three equidistant teeth). Retromargin bears three small teeth, the apical pair positioned in between second and third teeth of ventroprolateral teeth and the third tooth slightly anterior of the fourth ventroprolateral tooth. Legs black with yellowish coxa I, trochanter IV, dorsal and ventral patella I, apical third of tibia I, basal half of patella III, and tarsi IV. Trochanter I yellow ventrally. Coxae I gray basally with a gray spot apicoventrally. Metatarsi II, tarsi II, and venter and dorsum of tibia II yellowish brown. Tibia I with six pairs of ventral spines, middle pairs of spines longer than the rest. Metatarsi I with two pairs of ventral spines, basal spine very long equal to four-fifths length of metatarsi. Leg formula 1432. Pedipalp as long as combined length of patella and tibia of leg IV. RTA small and moderately S-shaped in ventral view. Left embolus thin and long, encircling the tegulum twice clockwise. Ejaculatory duct hardly visible except a portion near apical part of tegulum. Cymbium with a white groove near the tip of embolus before apex, two spines present apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.10	1.45	3.20	1.20	0.70	9.65
2	1.90	0.90	1.70	1.00	0.55	6.05
3	1.85	0.80	1.60	1.35	0.65	6.25
4	3.00	1.00	2.40	2.10	0.75	9.25
Pedipalp	1.10	0.50	0.90	–	0.90	3.40

Pedicel short, second segment shorter than the first. Abdomen black, globular without constriction, laterally grayish white. Venter light gray with a median longitudinal black band, and a sclerotized brown plate anterior of the tracheal spiracle. Anterior spinnerets sit on a white base, separated basally and moderately converging apically. Posterior spinnerets yellow-brown, much thinner than the robust anterior pair.

Etymology: Named after the type locality.

Natural history: The single specimen was collected by D-Vac machine from hopper-burned upland rice in September.

Material examined: **PHILIPPINES:** *Luzon Is.*, Laguna Prov., Caliraya, Manipon Vill., holotype male, 22 September 1986, M. Perez and A.T. Barrion.

Distribution: Philippines.

Myrmarachne onceana new species

(Fig. 25a–j)

Description:

Male: Total length 4.75 mm. Cephalothorax 2.55 mm long, 1.55 mm wide, 1.28 mm high. Abdomen 2.20 mm long, 1.25 mm wide, 1.18 mm wide. Cephalothorax covered with elongate scale-like white setae but sparse in the area enclosed by the eyes, reddish brown except black eye surroundings, posterior and lateral edges of cephalic area. Noticeably constricted behind PME, cephalic area flat dorsally, roughly one third higher than the moderately convex thorax. AME with a ring of white hairs, denser between AME and with two long upcurved bend setae. Thoracic area shorter (1.25 mm) than the cephalic (1.45 mm). Eye diameter (mm): AME = 0.40, PLE = 0.20, ALE = 0.18, PME = 0.06. Eye separation (mm): PLE–PLE = 1.11, PME–PME = 1.05, PME–PLE = 0.35, PME–ALE = 0.23, ALE–AME = 0.05, AME–AME = 0.04. Eye row length (mm): PLE = 1.35, AE = 1.20, PME = 1.13. Clypeus height very small, about 0.18 AME diameter. Sternum yellowish brown with gray tinge, slightly lanceolate, longer (1.28 mm) than wide (0.45 mm), apex narrowly truncated, lateral margins opposite coxae I broadly concave and with extensions to carapace, the rest of lateral margins straight without cavity, posterior tip sharply pointed between coxae IV. Labium dull reddish brown with yellow apex and posterior edge, constricted at midlateral half, apex concave and posterior end strongly rounded. Maxillae gray brown with yellow inner portion opposite scopulae, outer margins of apical half straight and parallel with the other, inner part with a deep cavity on an inner edge of maxillae to house labium. Chelicerae reddish brown without teeth on the outer edge, three-sided (triangular) in cross-section, narrowed in basal third, promarginal area moderately rough with small scattered teeth. Promargin bears six teeth, fifth tooth midway between the basal and second apical teeth, first tooth at apex of chelicerae slightly higher and longer than the second tooth. Retromargin with 11 smaller, equally spaced teeth. Small sclerotized flange present in the subbasolateral part of chelicerae. Fang very slightly bent at

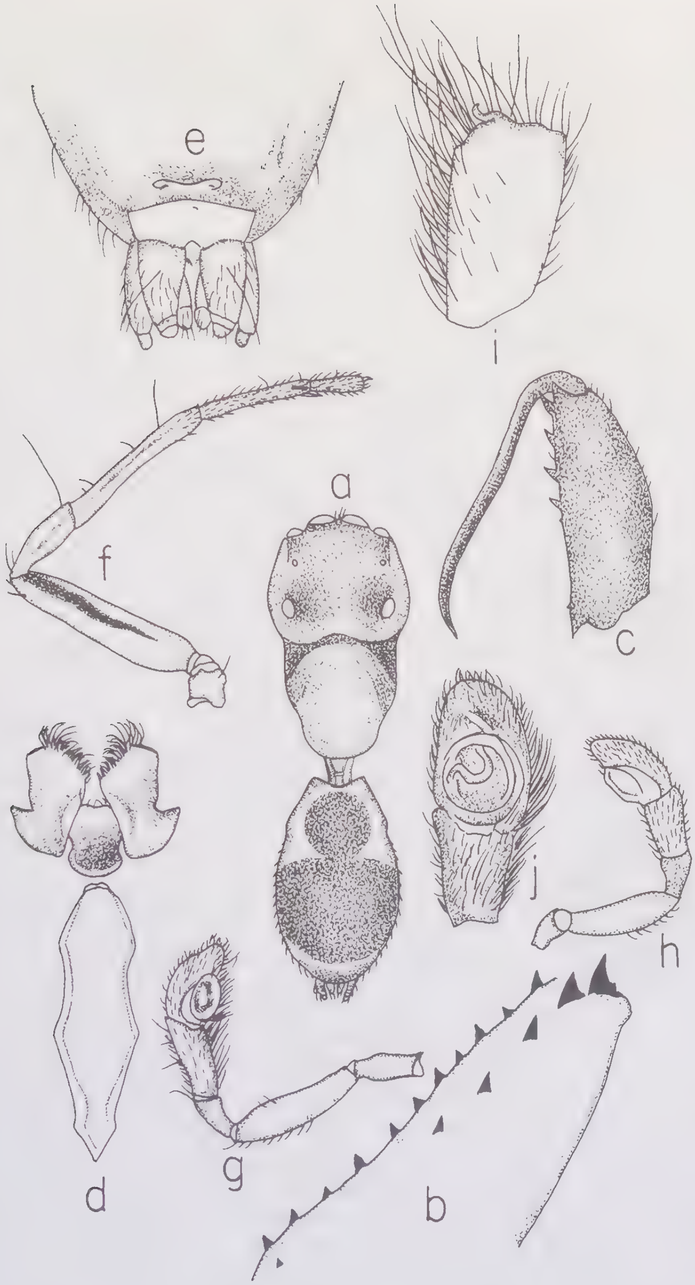

Fig. 25. Male *Myrmarachne onceana* n. sp. (a); promarginal and retromarginal teeth (b); chelicera (c); sternum, labium, and maxillae (d); posteroventer of abdomen showing spinnerets (e); leg I (f); ventrolateral (g) and dorsolateral (h) views of pedipalp; tibia of left palp showing RTA (i); and ventral view of tibia and tarsus (j).

midlength, apical one fifth yellowish and thinner than rest of the fang, without teeth. Legs moderately long and slender, brown yellow with gray tinges, leg I darker than other legs particularly if compared to leg II; retrolateral and prolateral sides of segments of legs I and II with black to gray longitudinal bands except in metatarsi and tarsi but only the patella and tibiae show similar pattern in legs III and IV, coxae I and III brownish and II and IV yellowish ventrally; trochanter II and IV strongly yellow ventrally. Femora I bear two dorsal and one prolateroapicodorsal spines, venter of tibia I with eight (2-2-2-2) spines and metatarsi I with four (2-2) ventral spines much longer than those on the tibia. Basal pair of metatarsal spines short, not reaching upper pair as in *M. vulgaris* n. sp. Tibia II with subbasal ventral spines and metatarsi with five (1-2-2) ventral spines, apicodorsal one fourth with a long and short trichobothria towards basal three fourths. Patella II with a subapicodorsal long hair about 0.8 length of patella. Leg formula 4132. Pedipalp 3.3 times longer than patella I, femur longer than patella + tibia, prolaterals of tibia with thick long hairs reaching the similarly thick haired basal part of cymbium. RTA present, basally broad and with a small sclerotized doubly curved and sharply pointed apex, the whole structure partly concealed at base of cymbium. Left embolus long and spiral, circling tegulum clockwise

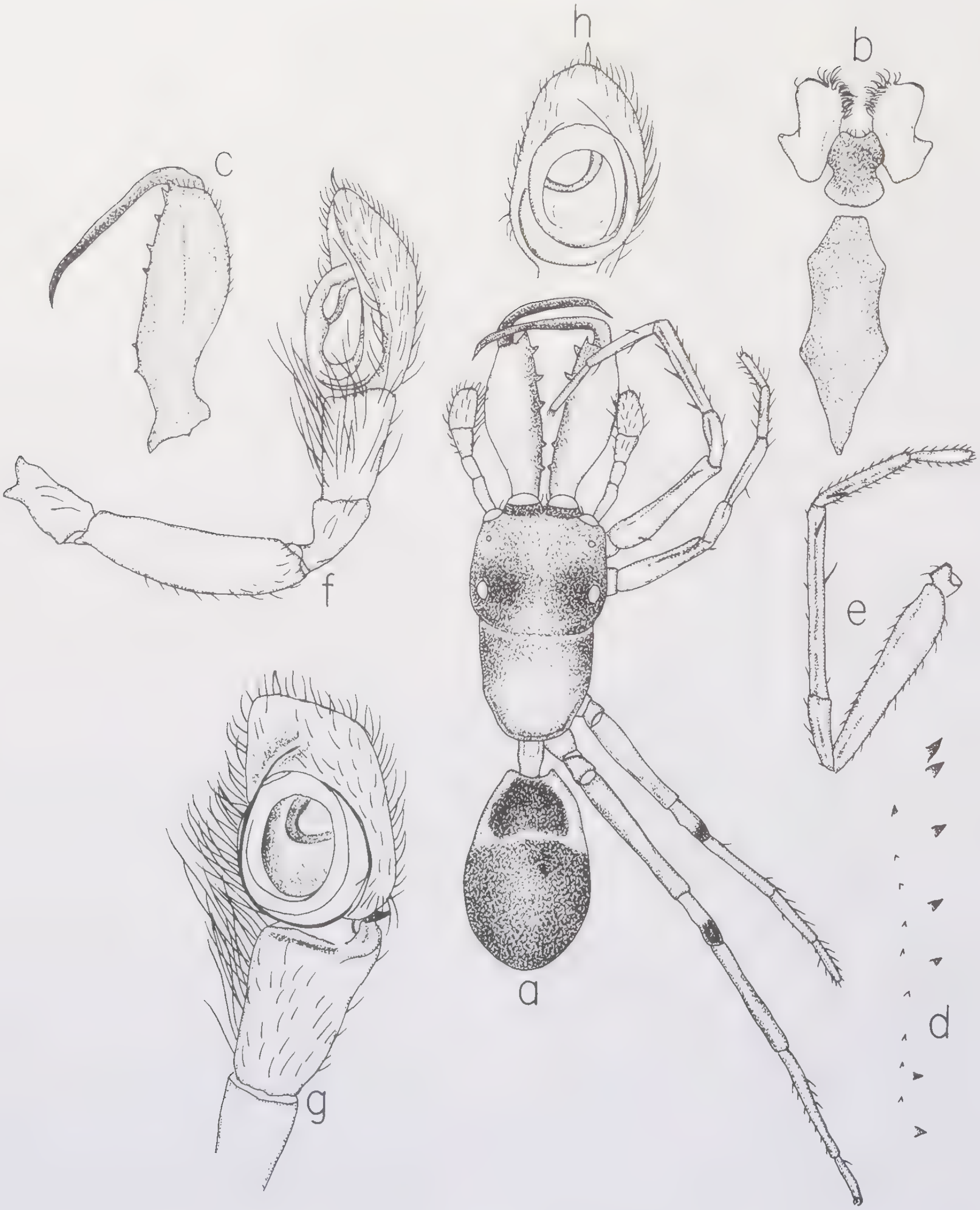

Fig. 26. Male *Myrmarachne pinoysorum* n. sp. (a); sternum, labium, and maxillae (b); right chelicera and fang (c); cheliceral teeth (d); leg I (e); entire pedipalp (f); ventral view of palp's tarsus, tibia, and patella (g); and ventral view of cymbium (h).

starting from apex and back to it but extended to a small atrium at subapex of cymbium; ejaculatory duct small, S-shaped to pocket-like at apicolateral part of tegulum. Cymbium obliquely truncate in the apical one third with a single spine at apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.81	0.65	1.58	0.94	0.45	5.43
2	1.20	0.58	1.03	0.69	0.35	3.85
3	1.25	0.53	1.00	1.01	0.44	4.23
4	1.90	0.68	1.63	1.50	0.48	6.19
Pedipalp	0.76	0.30	0.46	–	0.60	2.12

Pedicel one eighth longer than wide, anterior half broader than the basal half, posterior segment slightly longer than the anterior segment, without a prominent node-like process. Abdomen oblong, dull brown, with yellow band nearly encircling a round dark area anteriorly, and with a transverse concave yellow band subposteriorly. Venter with a broad median brownish yellow band from epigastric furrow posteriorly to spinnerets, lateral edges gray with four or five longitudinal yellow furrows, apical one fourth reddish brown with a pair of circular lobes dorsad of epigastric furrow. Spinnerets uniformly yellow, almost in a transverse row as viewed dorsally, anterior pair well separated basally, located in a yellow membraneous base with three black dots, one third to almost one half wider than the slender and widely separated posterior pair. Tracheal spiracle moderately concave with a brown spot on each end.

Etymology: Named after the presence of 11 teeth on the retromargin (11 = 'once' in Spanish).

Natural history: The holotype male was isolated from D-Vac samples taken from a rainfed wetland rice environment in September.

Material examined: **PHILIPPINES:** *Palawan Is.*, Palawan Prov., Narra, Punang Vill., holotype male, 28 September 1987, A.T. Barrion.

Distribution: Philippines.

Myrmarachne pinoysorum new species
(Fig. 26a–h)

Description:

Male: Total length 3.50 mm. Cephalothorax 2.0 mm long, 1.10 mm wide, 0.90 mm high. Abdomen 1.50 mm long, 1.05 mm wide, 1.00 mm high. Cephalothorax brown except black eye margins, cephalic area darker and 1.6 times longer than thoracic area, both areas with flat short white hairs and long white hairs in the ocular region. Eye row length (mm): AE = PLE = 1.00, PME = 0.85. Eye diameter (mm): AME = 0.33, ALE = 0.15, PLE = 0.15, PME = 0.05. Eye separation (mm): PLE = 0.90, PME = 0.73, AME–AME = AME–ALE = 0.05, PLE–PME = 0.23, PME–ALE = 0.15. Clypeus height very small, AME almost touches clypeal margins. Sternum brown with gray tinge, three times longer than wide, anterior end narrowly truncate, posterior end pointed before coxae IV, margins opposite coxae II markedly concave. Labium pale brown, slightly longer than broad and apical end moderately concave. Maxillae longer than broad, yellow except black scopulae. Chelicerae brown with toothless fang, constricted basally and three-sided due to ridges. Promargin bears seven teeth, apical tooth the largest and closest to fang base, subapical tooth much closer to first tooth than the third, and basal two small teeth widely separated from fifth tooth by the distance occupied by teeth 3 to 5. Retromargin with eight or nine minute teeth, first opposite the space between teeth 2 and 3 of promargin. Legs moderately long and slender, yellow except the lateral black stripes in femora, patellae, tibiae and metatarsi. Patellae III and IV with a black apicodorsal spot. Tibia I bears three pairs of ventral spines, middle pair above midlength of tibia, metatarsus I with two pairs. Leg formula 4132. Pedipalp brown except yellow femora and coxa, 1.17 times longer than femur IV, tibial ventrolateral hairs long, about as long as those arising from posterior of cymbium. RTA spiral with a short hooked, pointed tip. Left embolus circles the tegulum clockwise one and a half times. Ejaculatory duct with a distinct deep loop towards apex of tegulum. Cymbium obliquely cut from lateral midhalf towards apex, with a single spine.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.30	0.48	1.10	0.60	0.38	3.86
2	0.85	0.40	0.70	0.45	0.28	2.68
3	0.95	0.35	0.70	0.65	0.30	2.95
4	1.35	0.45	1.25	0.95	0.40	4.40
Pedipalp	0.55	0.25	0.30	–	0.48	1.58

Abdomen oblong, black, except the brown bell-like sclerotized plate bordered with yellow in the anterior one third, entire dorsum of abdomen covered with yellow-brown hairs, and no marked constriction anteriorly. Venter yellow with gray to black bands laterally and brown epigastric furrow. Pedicel distinct in dorsal view, segment I longer than the broader posterior segment II. Spinnerets entirely yellow, robust anterior pair close to each other basally and distinctly shorter than the slender and widely separated posterior pair.

Etymology: Named after the citizens of the Philippines called 'pinoys' in Tagalog + orum.

Natural history: The holotype male was collected by suction machine from newly harvested ricefield in February.

Material examined: **PHILIPPINES:** *Panay Is.*, Capiz Prov., Dumarao, Astorgas Vill., holotype male, 16 February 1981, A.T. Barrion.

Distribution: Philippines.

Genus *Bianor* Peckham and Peckham

Bianor Peckham and Peckham, 1885. Proc. Nat. Hist. Soc. Wisc. 1: 284.

A moderately small wide-ranging genus with 25 nominal species. Cephalothorax usually brown, slightly flattened and enlarged, and only slightly longer than broad. Ocular quadrangle much wider (ca. one third) behind than in front. AME of males more bulging than in *Harmochirus*. Carapace widest at PLE. Chelicerae with two teeth in the promargin and one tooth in the retromargin (unidentate). Male abdomen sometimes with scutum and white spots forming lateral bands on the sides or herringbone pattern on the abdomen. Leg I robust and thick without enlarged segments and feathery setae. Epigynum with bell-shaped pocket in the middle of an ovoid depression, copulatory canals running from tangled loops surrounding the hardly visible and variable spermathecae.

Bianor hotingchiehi Schenkel
(Fig. 27a–e)

Bianor hotingchiehi Schenkel, 1963. Mem. Mus. Nat., N.S. Zool. 25: 434.

Redescription:
Male: Total length 5.75 mm. Cephalothorax 2.85 mm long, 2.60 mm wide, 1.15 mm high. Abdomen 2.90 mm long, 1.80 mm wide, 0.75 mm high. Cephalothorax yellow-brown to brown (reddish brown to dark brown in preserved specimens), eye rims dark brown to black with violet luster, eye field yellowish, bearing a pair of white spots surrounding the short fovea between PLE, a moderately white oblique patch posterior of each PLE, and another pair of ovately diverging white bands in the middle of thorax almost in line with the pair between PLE. Lateral margin of thorax with white hairs. Eye diameter (mm): AME = 0.50, PLE = 0.25, ALE = 0.19, PME = 0.08. Eye separation (mm): PLE–PLE = 1.83, PME–PME = 1.43, PME–PLE = 0.53, PME–ALE = 0.43, AME–ALE = 0.13, AME–AME = 0.08. Length of eye rows (mm): PLE = 2.13, PME = 1.60, AE = 1.58. PLE on a moderately high tubercle. Clypeus height very small, as wide as diameter of PME and with a transverse row of white hairs. Sternum longer (1.13 mm) than wide (0.93 mm), reddish brown with long fine white hairs, anterior margin moderately concave, posterior end narrowly truncate, and lateral margins with spur-like protrusions between coxae I–II and coxae II–III, posterior one third of sternum slightly elevated. Labium reddish brown with a pale yellow truncate apex, base much wider than apex. Maxillae similar in color to labium except yellow inner margin, longer than wide, apex truncated with a narrow spur or teeth projected laterally in the outer apicolateral margin. Chelicerae short but robust, reddish brown. Promargin with two widely separated teeth, apical one adjacent to base of fang, while robust basal tooth armed with small peg-like teeth distally and three small tubercles towards its base. Retromargin with only a tooth. Chelicerae constricted subbasally. Fang without a median tooth. Leg I longer, darker-colored and more robust than yellowish legs II–IV; coxae I and trochanter I distinctly longer and wider than the other coxae and trochanters. Femora I stout with apicoventral one half moderately flat, patella I more than one half length of tibia. Spination on venter of tibia I is six (1-1-2-2), II with two (1-1) lateroventral spines, III with one apicoventral, and IV with none. Metatarsi I and II with four (2-2). Metatarsi and tarsi of leg I clothed with thin, fine and long hairs. Leg formula 1342. Pedipalp longer than femur and patella of leg III. Femur without spines and curved on dorsal surface. Patella and tibia each with a thin, long subapical seta. RTA well sclerotized, projected anteriorly and moderately narrowed before a slightly pointed apex. Left embolus clockwise, long and thin towards tip terminating toward apex of cymbium. Posterior half of cymbium light brown, apical half yellowish brown with moderately thick mass of hairs. Middle of tegulum elevated in side view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.85	1.25	2.10	1.50	0.70	7.40
2	1.20	0.80	0.95	0.80	0.45	4.20
3	1.50	0.80	0.88	0.75	0.50	4.43
4	1.40	0.70	0.96	0.90	0.45	4.41
Pedipalp	1.00	0.45	0.40	–	0.55	2.40

Abdomen oblong, brown with short and long yellowish brown hairs all over the abdomen, and with six white spots in three pairs – anterior margin, submedian, and on posterior third; broader along the submedian pair of white spots. Ventrolateral edges with irregular black to gray longitudinal striae, venter yellow-brown with five or six gray transverse bands. Anterior pair of spinnerets parallel to each other, almost contiguous basally, and with three moderately thick patches of yellow hairs at base. Other spinnerets much smaller than the anterior pair.

Female: Total length 4.75 mm. Cephalothorax 2.35 mm long, 1.80 mm wide, 1.25 mm high. Abdomen 2.40 mm long, 1.70 mm wide, 1.35 mm high. Cephalothorax longer than wide, widest just behind PLE, dark brown to dark reddish brown with white scale-like hairs on lateral, cephalic and posterior areas, and moderately long brownish black hairs along eye areas and posterior one sixth of cephalothorax. Eye margins black except brown in AME, area enclosed by eyes flat and quite rough in appearance. Fovea short higher than posterior level of PLE. Eye diameter (mm): AME = 0.45, PLE = 0.21, ALE = 0.18, PME = 0.08. Eye separation (mm): PLE = 1.73 mm, PME = 1.41, AME–ALE = 0.10, AME–AME = 0.05, PLE–PME = 0.40, PME–ALE = 0.31. Length of eye row (mm): AE = 1.48, PME (second row) = 1.51, PLE (third row) = 1.95. Clypeus height very small, one ninth of AME diameter and covered with long white hairs. Sternum grayish to yellow-brown with white hairs, longer (1.00 mm) than wide (0.60 mm), anterior margin moderately narrowed and concave, posterior end blunt just anterior of coxae IV, and margins opposite coxae III and IV slightly indented. Labium and maxillae reddish brown except yellow apex of labium and maxillae and inner lateral margins of the endites. Chelicerae with simple teeth, one tooth on the retromargin and two on the promargin. Legs yellow except leg I brown-yellow and robust with three pairs of ventral spines on tibia I and two pairs of ventral spines on metatarsi I. Leg formula 1342. Pedipalp yellow with moderately thick hairs on tarsi, combined length longer than patella + tibia IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.30	0.80	1.15	0.70	0.45	4.40
2	1.00	0.70	0.70	0.58	0.38	3.36
3	1.33	0.75	0.83	0.65	0.33	3.89
4	1.13	0.68	0.75	0.85	0.41	3.82
Pedipalp	0.60	0.25	0.26	–	0.40	1.51

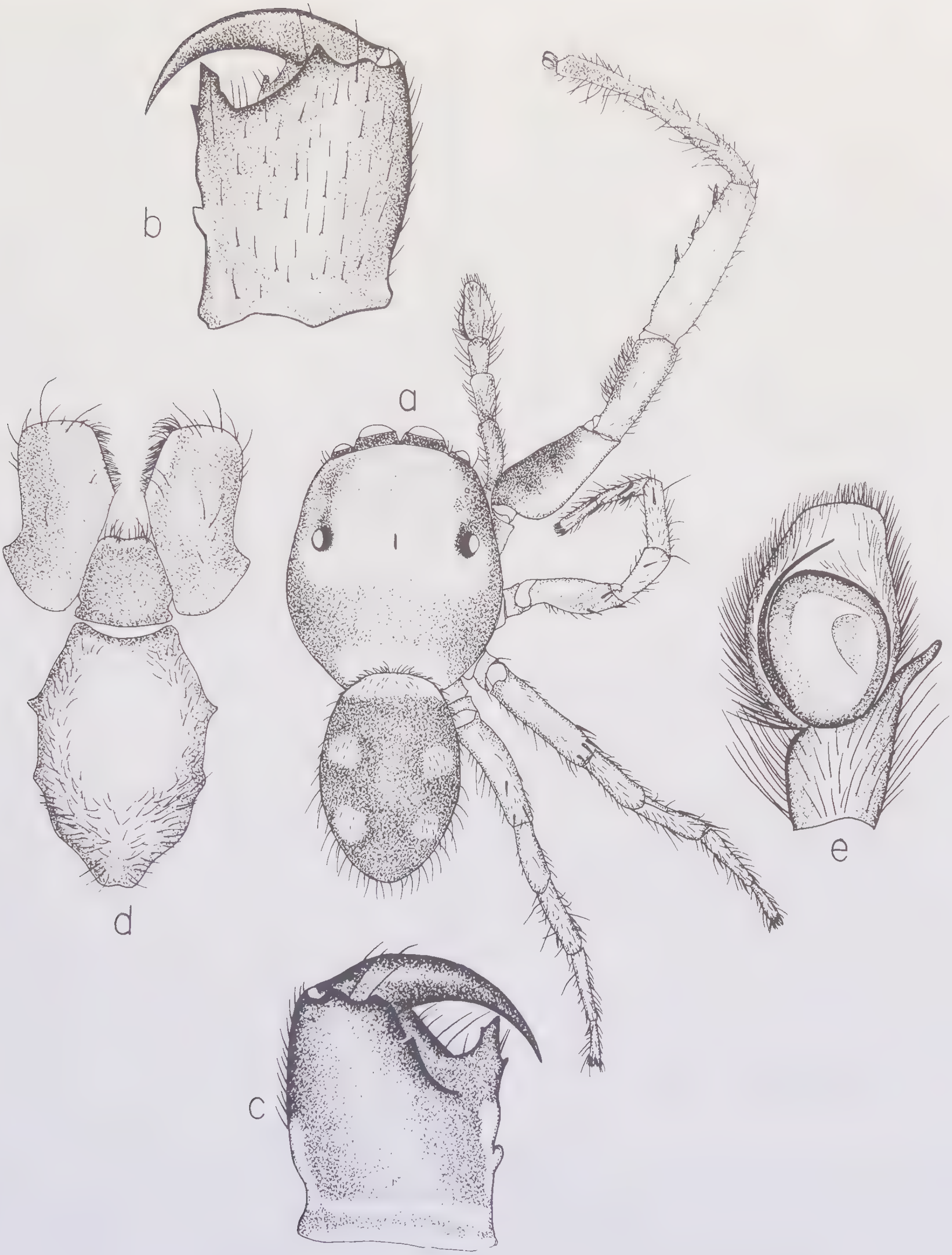

Fig. 27. Male *Bianor hotingchiehi* Schenkel (a); dorsal (b) and ventral (c) views of right chelicera; sternum, labium, and maxillae (d); and ventral view of pedipalp's tarsus and tibia (e).

Abdomen longer than wide, gray-brown with varying light gray spots and wavy streaks produced by pigmentation and hair tufts. Anterior margin with denser and longer hairs, and rest of abdomen covered with fine hairs. Venter yellowish gray with darker laterals and orange-brown spinnerets. Epigynum with median bell-shaped hood and a transverse C-shaped sclerotization anterior of it.

Natural history: A male specimen was collected by sweeping a 55-day-old lowland rice in August in Vietnam. In Rangoon, Myanmar, a female and an immature were collected by U. Nang (Biocontrol team) from ricefields in October.

Material examined: VIETNAM: Tien Gian Prov., Cai Lay District, one male, 18 August 1990, A.T. Barrion; **MYANMAR:** Rangoon, Nmawhi District, one female and a spiderling, October 1990, U. Nang.

Distribution: China, Vietnam and Myanmar (new record).

Genus *Gangus* Simon

Gangus Simon, 1902. Ann. Soc. Ent. France 71: 390.

A medium-sized jumping spider, moderately flat with carapace longer than wide, sides more or less parallel, lateral setae form a tuft below PME in females, PME small and slightly closer to ALE. Ocular quadrangle slightly wider behind than in front with PLE at about midlength of carapace. Thoracic area with dorsal striae. Femur I not flattened, tibia I with three pairs of ventral spines and metatarsi I with two pairs. Abdomen elongate usually with spots at the posterior end. Male pedipalp with very long embolus, coiled around tegulum, tegulum rounded with pronounced apophysis, and sharply pointed tibial apophysis. Female epigynum with a small median fossa.

Gangus Simon is endemic to Australasia with only four nominal species.

Gangus manipisus new species

(Fig. 28a–g)

Description:

Male: Total length 5.85 mm. Cephalothorax 2.45 mm long, 1.70 mm wide, 0.95 mm high. Abdomen 3.40 mm long, 1.70 mm wide, 0.95 mm high. Cephalothorax brown except yellow eye area with a pair of thin interrupted black longitudinal bands, and flat club-like setae in ocular area, on sides of cephalic area to part of upper thorax, and on posterior edge of thorax, black eye margins, and eight or nine blackish striae coming from margins of thorax directed towards short, brown fovea. Eye row length (mm): PLE = 1.26, AE = 1.16, PME = 1.10. Eye diameter (mm): AME = 0.46, PLE = 0.14, ALE = 0.13, PME = 0.05. Eye separation (mm): PLE–PLE = 1.08, PLE–PME–ALE = 0.28, PME–PME = 1.00, ALE–AME = 0.06, AME–AME = 0.05. Clypeus height very small, about 0.10 AME diameter. Sternum yellow with light black median band and dark black margins, longer than wide and broadest between coxae II and III, lateral projections either size of coxae III, anterior end truncate and posterior end tapers to a blunt point. Labium dark red-brown, similar to maxillae. Outer lateral midhalf of maxillae constricted, apex subtruncated and has a yellow base of serrula and scopulae. Chelicerae small but relatively long, promargin with a bifurcated tooth and a long ridge to base of chelicerae. Retromargin with a simple tooth. Legs yellow with gray-brown bands except the brown leg I. Venter of tibia I bears seven (2-2-1-2) ventral spines with four promarginals and three retromarginals, dorsum with a thin erect seta in each of the subbasal and subapical areas. Metatarsus I has four (0-2-2) ventral spines. Leg I generally with dark brown hairs on the venter of its segments, more pronounced in the apical half of femur, patella and tibia. Leg formula 1432. Pedipalp slightly longer than combined length of metatarsus + tarsus IV, femur with subapical spines, tibia wider than long with a slender RTA. Right embolus thin and long, circling the tegulum in a counterclockwise direction, its tip slightly extended beyond tip of cymbium. Apex of cymbium truncated.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.90	1.35	0.80	0.45	5.00
2	0.90	0.55	0.65	0.33	0.30	2.73
3	1.15	0.60	0.63	0.63	0.40	3.41
4	1.25	0.58	0.83	0.68	0.35	3.69
Pedipalp	0.36	0.16	0.18	–	0.38	1.08

Abdomen twice longer than broad, checkered yellow and brown with two transverse yellow bands in the posterior one third enclosing a black band with a yellow spot in the middle and another black band posterior of the second transverse interrupted yellow band. Venter of abdomen brown with a pair of converging yellow spots anterior of the epigastric furrow.

Etymology: Named after the thin body feature of species in Tagalog ('manipis' means thin).

Natural history: The holotype male was suction-collected using a D-Vac machine from a grassland environment dominated by *Themeda* and *Paspalum* in September.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria-Mat-i boundary, holotype male, 23 September 1987, A.T. Barrion.

Distribution: Philippines.

Genus *Hyllus* C.L. Koch

Hyllus C.L. Koch, 1846. Die Arachniden 13: 161.

Jumping spiders of the genus *Hyllus* are big, often more than 10 mm long. The genus is widely distributed geo-

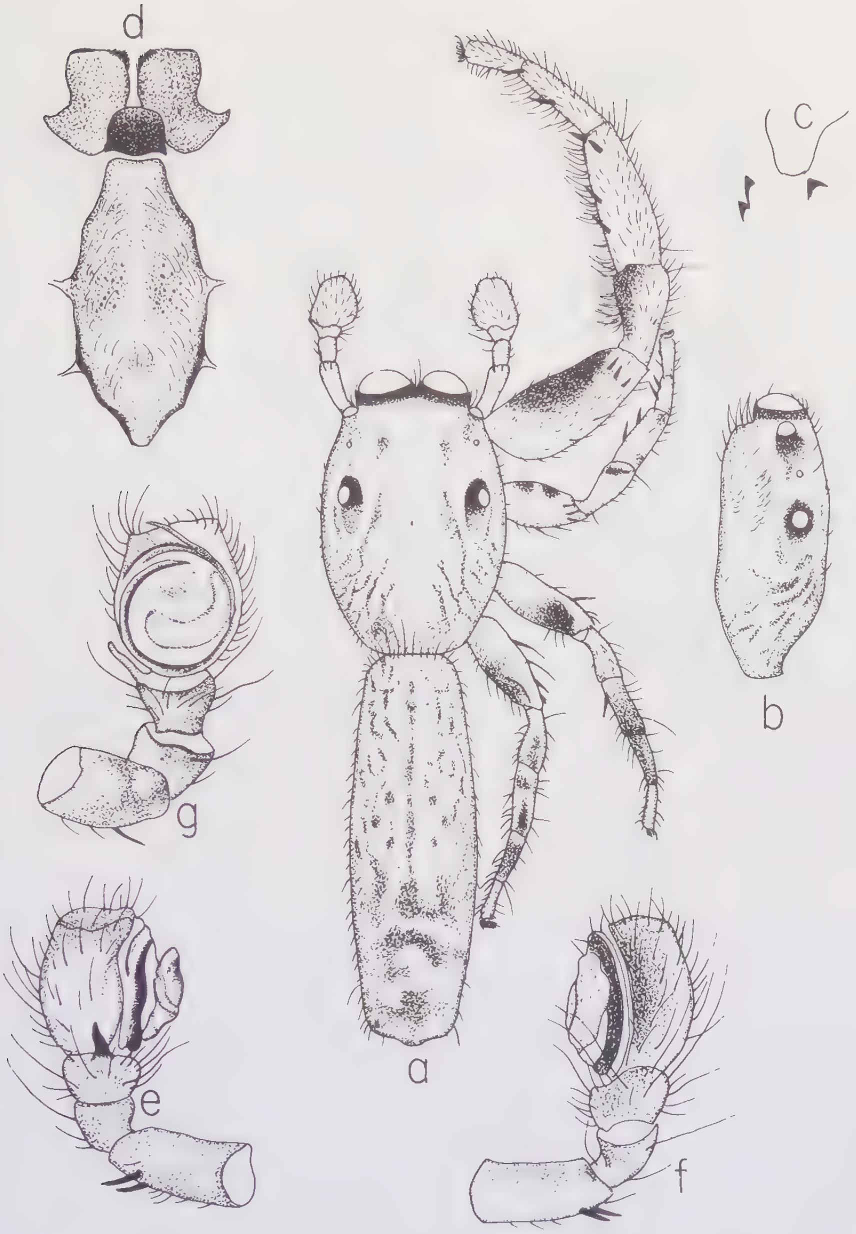

Fig. 28. Male *Gangus manipisus* n. sp. (a); side view of carapace (b); cheliceral teeth (c); sternum, labium, and maxillae (d); and lateral (ef) and ventral (g) views of pedipalp.

graphically with 79 nominal species scattered around the world. The diagnostic generic characters are the broad thickly set cephalothorax, long and squat legs densely covered by hairs. Some species have the palpal organ with a membranous 'keel' or structure accompanying the embolus. Female epigynum bears two pockets close to the epigastric furrow.

Hyllus maskaranus new species
(Fig. 29a–f)

Description:

Female: Total length 14.75 mm. Cephalothorax 6.20 mm long, 5.20 mm wide, 3.70 mm high. Abdomen 8.55 mm long, 4.90 mm wide, 4.20 mm high. Cephalothorax brown, except white hairs in and around ocular area, lateral areas of cephalothorax covered with white and dark brown hairs, eye margins black, and lateral side of PME with an erect black hair tuft. Eye row length (mm): PLE = 3.23, AE = 3.20, PME = 3.03. Eye diameter (mm): AME = 0.90, PLE = 0.50, ALE = 0.45, PME = 0.13. Eye separation (mm): AME–AME = 0.20, AME–ALE = 0.28, ALE–PME = 0.60, PME–PME = 2.85, PLE–PME = 0.70, PLE–PLE = 2.63. Clypeus height moderately large, about one third AME diameter. Sternum longer (2.5 mm) than wide (1.6 mm), yellow except yellow-brown margins, anterior end straight to slightly concave, posterior end well rounded dorsad of

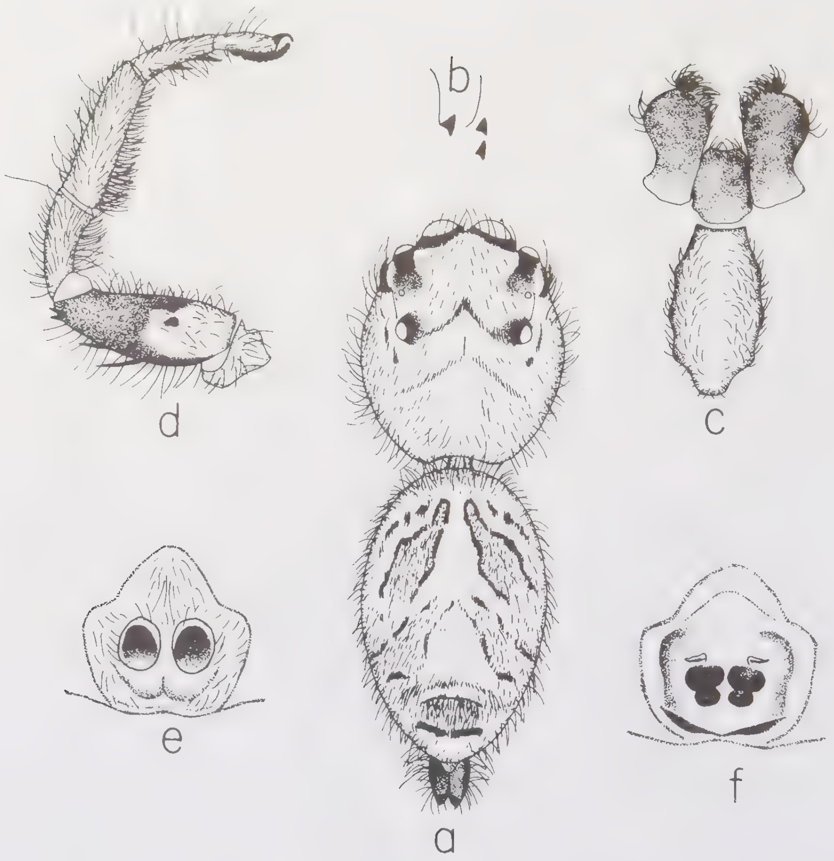

Fig. 29. Female *Hyllus maskaranus* (a); cheliceral teeth (b); sternum, labium, and maxillae (c); leg I (d); and dorsal (e) and ventral (f) views of epigynum.

coxa IV, margins opposite each coxa straight to slightly concave except that in IV with a deeper cavity and a slight protrusion developed between cavities for coxae III and IV. Labium reddish brown except dark reddish brown apex and mid-outer lateral edges, convex medially and apex moderately notched. Maxillae similar in color to labium, apical half anterior of constriction rounded and about one third wider than base. Chelicerae robust, dark reddish brown, promargin with a bifurcate apical tooth and retromargin with one simple tooth. Legs reddish brown, hairy and with strong ventral spines. Femur I blackish red except basal half. Venter of the tibia I with seven (2-2-1-2) ventral spines – four prolateral and three retrolateral. Metatarsi with four (0-2-2) ventral spines. Segments of leg I–IV with numerous long and thin brown setae. Venter of femora I–IV lined with long fine white hairs. Leg formula 1432. Pedipalp as long as combined length of tibia + metatarsus I, covered with long white hairs, all anterodorsal segments of femur with two spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.40	2.40	3.15	1.80	1.00	11.75
2	2.65	1.70	2.10	1.30	1.00	8.75
3	3.75	2.10	2.10	2.00	1.15	11.10
4	3.55	1.85	2.80	2.30	1.10	11.60
Pedipalp	1.70	0.75	0.95	–	1.50	4.90

Abdomen yellow with four or five brown bands becoming oblique in lateral view, venter yellow with a broad brown longitudinal band and lateral edges with brown spots. Anterior pair of spinnerets robustly built, bases near each other and dark brown to black towards apex, similar to apical segment of the slender and longer posterior spinnerets. Epigynum with a dome-shaped anterior edge and a pair of circular orifices anterior of a broad sclerotized plate borne out of a hollow transverse canal near the epigastric furrow. Middle posterior margin of plate cleft. Copulatory canals joining the strong double-chambered spermathecae parallel to each other.

Etymology: Named after the mask-like appearance of epigynum (mask = 'maskara' in Tagalog + anus).

Natural history: The holotype female was collected from ears of corn intercropped with rice and observed preying on armyworm larvae in August. It had two second- to third-instar larvae in its chelicerae when collected.

Material examined: PHILIPPINES: *Mindanao Is.*, Bukidnon Prov., Pangantukan, holotype female, 20 August 1981, R. Labios.

Distribution: Philippines.

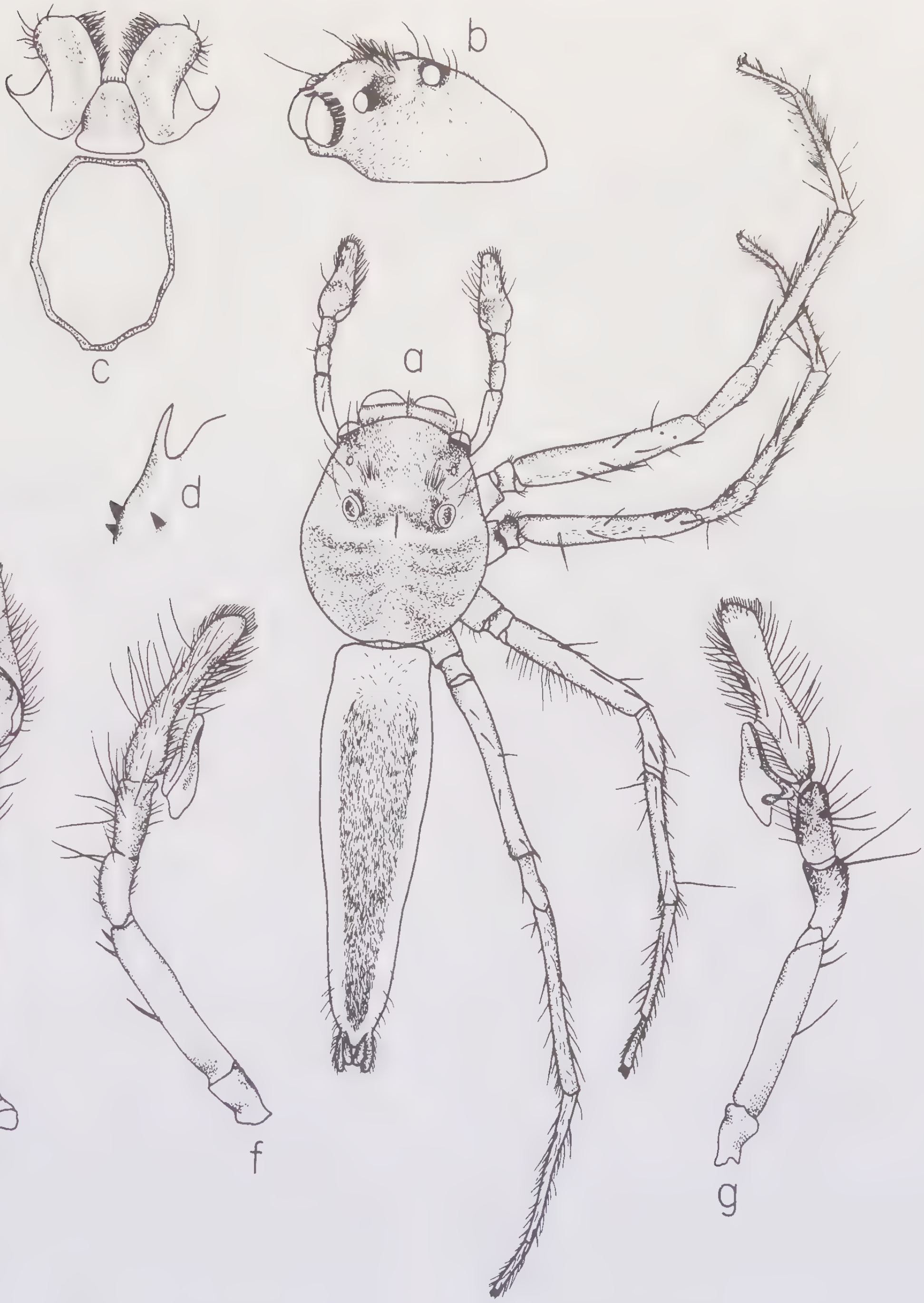

Fig. 30. Male *Epeus edwardsi* n. sp. (a); side view of carapace (b); sternum, labium, and maxillae (c); cheliceral teeth (d); and ventral (e) and lateral (fg) views of pedipalp.

Genus *Epeus* Peckham and Peckham

Epeus Peckham and Peckham, 1885. Trans. Wisc. Acad. Sci. Ants Let. 6: 271, 334.
Viciria Simon, 1903. Hist. Nat. des Araign. 2(4): 742–748.
Plexippoides Proszynski, 1976. Rozprawy WSP 6: 427–436.

A small Oriental genus of moderately large jumping spiders, less than 8 mm long and presently contains five nominal species. Cephalothorax longer than wide, lateral margins convex, cephalic area brightly colored orange to red with white patches or bands in some species, PLE narrower than cephalothorax and occupies less than half length of carapace, PME about equidistant between ALE and PLE. Thoracic area mostly green in some species. Males usually have thick brush of hairs on metatarsus I and white hairs on some segments, cephalothorax with protruding, upwardly directed bristles, and palpal organs bear a long outgrowth of cymbium towards tibia. Epigynum of females with long translucent canals, developing series of loops.

Epeus edwardsi new species

(Fig. 30a–g)

Description:
Male: Total length 9.15 mm. Cephalothorax 3.75 mm long, 3.10 mm wide, 2.00 mm high. Abdomen 5.40 mm long, 1.60 mm wide, 1.80 mm high. Cephalothorax pale yellow-brown except short black fovea, black eye areas in ALE, PLE, and PME, white hairs around eye margins, and short and sparsely-set pale brown hair tuft between PLE and PME. Space between PLE without hair tuft and a long brown hair present posterior of PLE. Cephalic area higher than thoracic area. Eye row length (mm): AE = 2.20, PLE = 2.10, PME = 1.90. Eye diameter (mm): AME = 0.83, PLE = 0.43, ALE = 0.38, PME = 0.09. Eye separation (mm): PLE–PLE = 1.49, PME–PME = 1.66, PLE–PME = 0.45, PME–ALE: 0.40, AME–AME = 0.09, AME–ALE = 0.26. Clypeus height wide, about 0.36 AME diameter, middle space between AME bears three long slightly upcurved white bristles. Sternum yellow with sclerotized brown margins, longer (1.50 mm) than wide (1.20 mm) and bears moderately thick long yellow bristles on posterior one third. Anterior end of sternum more broadly truncate than its posterior end (0.65 : 0.30 mm). Labium reddish brown, slightly yellow apically, and broad basally. Maxillae diverging apically, pale reddish brown, yellow at base of thick orange-brown scopulae. Chelicerae moderately robust, similar in color to labium and maxillae. Promargin bears two teeth, right retromargin with one tooth, and none in left retromargin. Cheliceral teeth widely separated from base of fang with a ridge after promarginal teeth. Legs long and slender, I and II reddish brown except yellow apical one third of metatarsus I and venter of femur II and more hairy than III and IV. Dorsum and venter of leg I more densely covered with hairs than leg II, particularly apical half of metatarsus I. Femur I equally long, with five (1-1-1-2) dorsal spines, three (0-1-1-1) prolateral and two (0-1-1-0) retrolateral spines. Tibia I bears eight (2-1-1-2-2) ventral, three (1-1-1) prolateral, and two (1-1-0) retrolateral spines. Metatarsus I has four (2-0-2) ventral, two (1-0-1) prolateral and two (1-0-1) retrolateral spines. Longest ventral spine of metatarsus I about 0.39 of its length. Leg formula 1324. Pedipalp yellowish brown to reddish brown except yellow femur and patella, slightly longer than femur I, its femur shorter than patella I and II and bears two (0-1-1) dorsal spines. Tibia distinctly longer than wide. RTA short and slightly pointed at tip and nearly in contact with the thin yellow blade-like cymbial spur. Embolus clockwise, slender apical part inside the cymbial groove. Tegulum whitish yellow, posterior end extended to tibia bluntly curved. Cymbium almost twice as long as tegulum length and clothed with moderately thick layer of long light brown hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.25	1.75	4.60	3.30	1.10	15.00
2	3.90	1.65	3.50	2.70	1.00	12.75
3	4.20	1.40	3.40	3.50	1.10	13.60
4	3.10	1.00	2.75	2.90	0.90	10.65
Pedipalp	1.60	0.70	0.60	–	1.40	4.30

Abdomen yellow with orange-brown dorsal band, 3.4 times longer than broad, tapering posteriorly. Venter yellow. Spinnerets brownish gray, basal segment of posterior pair distinctly long and slender. Anal tubercle yellow.

Etymology: Named after Dr G.B. Edwards, curator of Arachnida in Florida State Collections, USA.

Natural history: The holotype material was collected from rice panicles by vial-tapping in October.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato, Koronadal, Morales Vill., one male, 5 October 1984, C. dela Cruz.

Distribution: Philippines.

Epeus hawigalboguttatus new species

(Fig. 31a–g)

Description:
Male: Total length 7.20 mm. Cephalothorax 3.40 mm long, 2.80 mm wide, 1.70 mm high. Abdomen 3.80 mm long, 1.40 mm wide, 1.40 mm high. Cephalothorax yellow-brown except brown cephalic area, margins of AME and black eye margins of remaining eyes. Middle of PLE with a thick divided tuft of black hairs. Cephalic area distinctly higher than thoracic area. Eye row length (mm): AE = 1.85, PLE = 1.75, PME = 1.55. Eye diameter (mm): AME = 0.70, PLE = 0.30, ALE = 0.28, PME = 0.10. Eye separation (mm): PLE–PLE = 1.25, PME–PME = 1.40, PLE–PME = PME–ALE = 0.40, AME–AME = 0.08, AME–ALE = 0.20. Clypeus height relatively large, about 0.4 AME diameter. Sternum yellow, longer than wide (1.15 : 1.00 mm); anterior end broadly truncate, lateral margins without cavities except opposite area between coxae III and IV, forming a narrowly truncated posterior end anterior of coxa IV. Labium reddish brown similar to maxillae except yellow apex. Inner one third of maxillae forming an oblique yellow area. Chelicerae moderately stout, simple, and retromargin with a simple tooth. Promargin bears two teeth with the basal tooth smaller. Legs yellow except brownish tibiae, metatarsi and tarsi (darker in legs I and

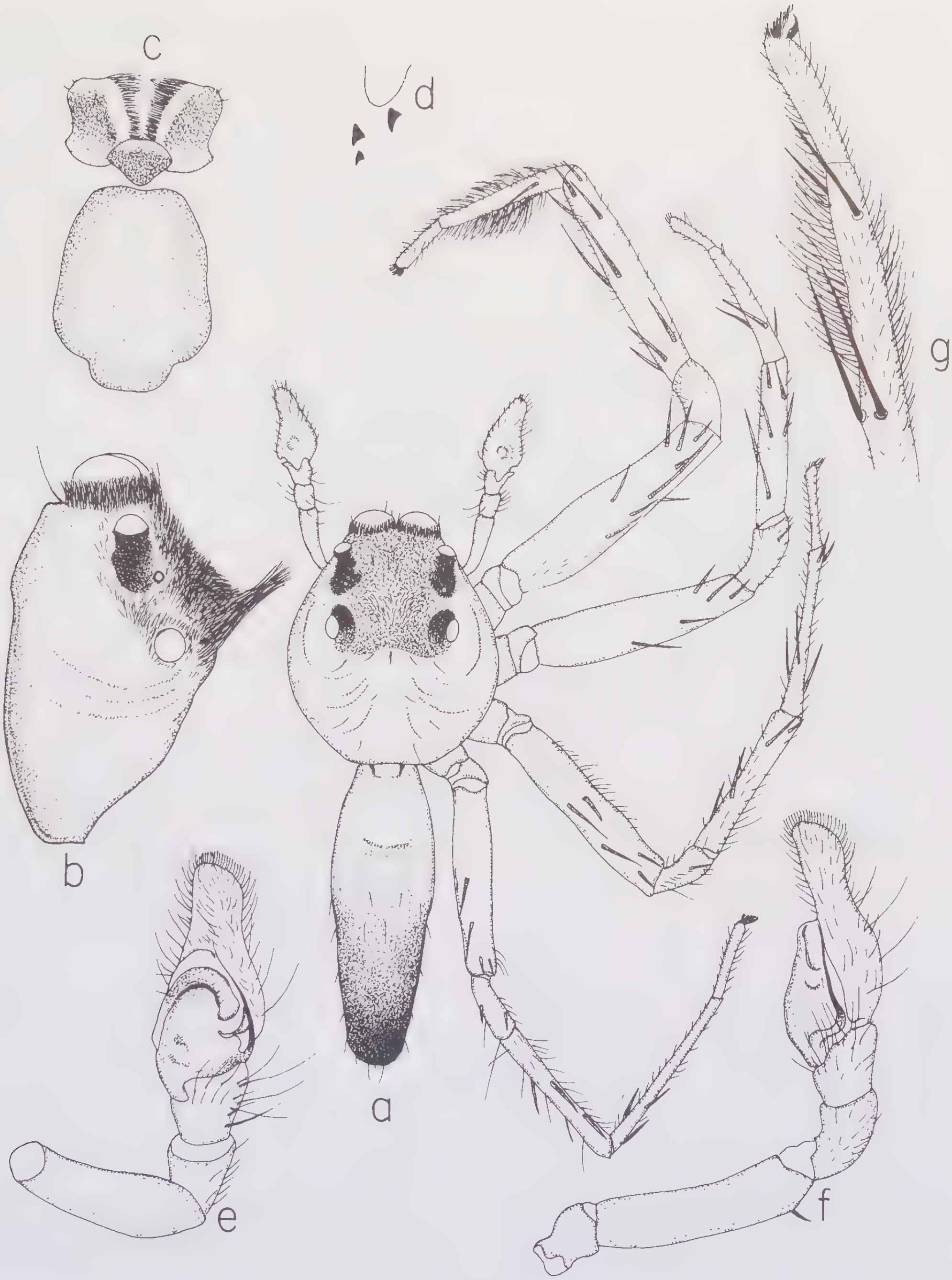

Fig. 31. Male *Epeus hawigalboguttatus* n. sp. (a); side view of carapace (b); sternum, labium, and maxillae (c); cheliceral teeth (d); ventral (e) and lateral (f) views of pedipalp; and metatarsus and tarsus of leg I (g).

II), metatarsus I with thick black hairs on its entire length. Right femur slightly longer than left femur in leg I. Femur I with six (1-1-1-1-2) dorsal, three (0-1-2-0) prolateral, and two (0-1-1-0) retrolateral spines. Tibia I bears eight (2-1-1-2-2) ventral spines. Metatarsus I has four (2-0-2) ventral spines. Leg formula 1234. Pedipalp yellow except pale yellow-brown tibia and cymbium, slightly longer than femur I, its femur as long as patella I but longer than patella II. Tibia slightly longer than wide to as long as wide. RTA small, projected laterad with the lateral outgrowth of cymbium nearly touches it. Embolus set clockwise, long and filamentous, nearly reaching apex of cymbium passing a cymbial groove. Cymbium 1.64 times longer than tegulum and clothed with relatively thick set of white hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.80	1.10	2.50	1.90	0.85	9.15
2	2.50	1.05	2.25	1.85	0.80	8.45
3	2.75	0.65	1.80	2.20	1.00	8.40
4	2.25	0.95	2.00	2.15	0.95	8.30
Pedipalp	1.10	0.45	0.35	-	1.00	2.90

Abdomen 2.7 times longer than broad, widest at midhalf, yellow in the apical one third with a pair of pale brown median spherical spots and a white anterior margin, rest of abdomen black to gray-brown and narrower than the anterior one third. Venter yellow in the anterior half and gray-brown in the posterior half. Spinnerets short, compact, and uniformly black.

Etymology: Name derived after its similarity ('hawig' in Tagalog) to *albogutattus*.

Natural history: The holotype specimen was collected by D-Vac suction machine from a weedy upland ricefield in August.

Material examined: PHILIPPINES: *Mindanao Is.*, Zamboanga del Sur, Molave, holotype male, 9 August 1979, A.T. Barrion.

Distribution: Philippines.

Genus *Cosmophasis* Simon

Cosmophasis Simon, 1901. Hist. Nat. des Araign. 2(3): 542.

Medium-size spiders, ca. 7 mm long, very active and possess multicolored iridescent scale-like hairs on the carapace, abdomen, and pedipalps (note: hairs are easily removed in preserved specimens). Carapace widest behind PLE. Ocular quadrangle about as long as wide, wider behind than in front. PLE rarely on tubercles. Cephalothorax with green metallic luster, a streak of scale-like setae in the eye field. Left palpal organ with long spiniform embolus clockwisely turned arising retrolaterally and often longer than the bulb. Spermathecae in females anterior to fossae, tibial apophysis with pointed ventral projection and a rounded dorsal projection, cymbium moderately curved in apical half and tip obliquely truncate. Abdomen with whitish yellow bands and spots along lateral margins or transverse bands in the posterior one half.

Cosmophasis estrellaensis new species

(Fig. 32a–g)

Description:

Male: Total length 7.10 mm. Cephalothorax 3.10 mm long, 2.40 mm wide, 1.60 mm high. Abdomen 4.00 mm long, 1.45 mm wide, 0.90 mm high. Cephalothorax dark reddish brown with black eye margins, iridescent hairs posterior of PLE, ocular area and posterolateral edges of the midhalf of thorax. Anterior eye row fringed above with dense short and sparse long brown to gray hairs. Moderately long white hairs present between AME dorsally. Short black fovea almost in line at midlength of space separating PLE. Thoracic area slightly inclined posteriorly and bears a pair of erect black setae on the posterior margin. Eye row length (mm): PLE = 1.79, AE = 1.75, PME = 1.6. Eye diameter (mm): AME = 0.48, PLE = 0.30, ALE = 0.25, PME = 0.08. Eye separation (mm): AME–AME = 0.09; AME–ALE = 0.10, PME–PME = 1.43, PLE–PLE = 1.45, PME–PLE = 0.30, PME–ALE = 0.38. Clypeus height twice AME separation. Sternum brown, as slightly longer than wide with truncate anterior and posterior margins. Labium and maxillae brown except yellow apical margin. Chelicerae robust, red-brown, twice longer than broad, and bear a short fang. Promargin bears three teeth, of decreasing size towards posterior, large apical tooth porrect. Retromargin with a tooth. Legs reddish brown. Tibia I with three pairs of ventral spines and a single spine each in the apical one third of each lateral side. Metatarsus I with two pairs of ventral spines – an apical and basal pair. Leg formula 2413. Pedipalp yellow except dark brown cymbium, coxae, trochanter, and basal half of femur. RTA sclerotized and bifurcate, inner tooth sharply pointed while the outer tooth is bluntly rounded. Dorsum of tibia bears a long brown thin median seta and thick white hairs laterally. Left embolus curved clockwise, short of completing one loop on the tegulum. Tegulum swollen anteriorly and posteriorly at base of embolus. Cymbium hook-like, hirsute apically, and with a cavity anterior of tegulum in retrolateral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.30	1.05	1.60	1.45	0.60	7.00
2	2.20	1.10	1.85	1.55	0.65	7.35
3	1.90	0.70	1.30	1.60	0.60	6.10
4	2.15	0.90	1.60	1.80	0.70	7.15
Pedipalp	1.20	0.55	0.60	–	0.95	3.30

Abdomen 2.7 times longer than broad, brownish gray with a white to yellow median band, and a white marginal band becoming more noticeable in the setaceous anterior end. Venter yellow brown except white and gray lateral margins. Anterior spinnerets moderately robust but shorter than the posterior pair, base of anterior pair each with a gray-brown circular spot. Apex of posterior pair of spinnerets black as seen dorsally.

Etymology: Named after type locality.

Natural history: The only specimen was collected from irrigated ricefield at ripening stage in September.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Narra, Estrella Vill., holotype male, 28 September 1987, A.T. Barrion.

Distribution: Philippines.

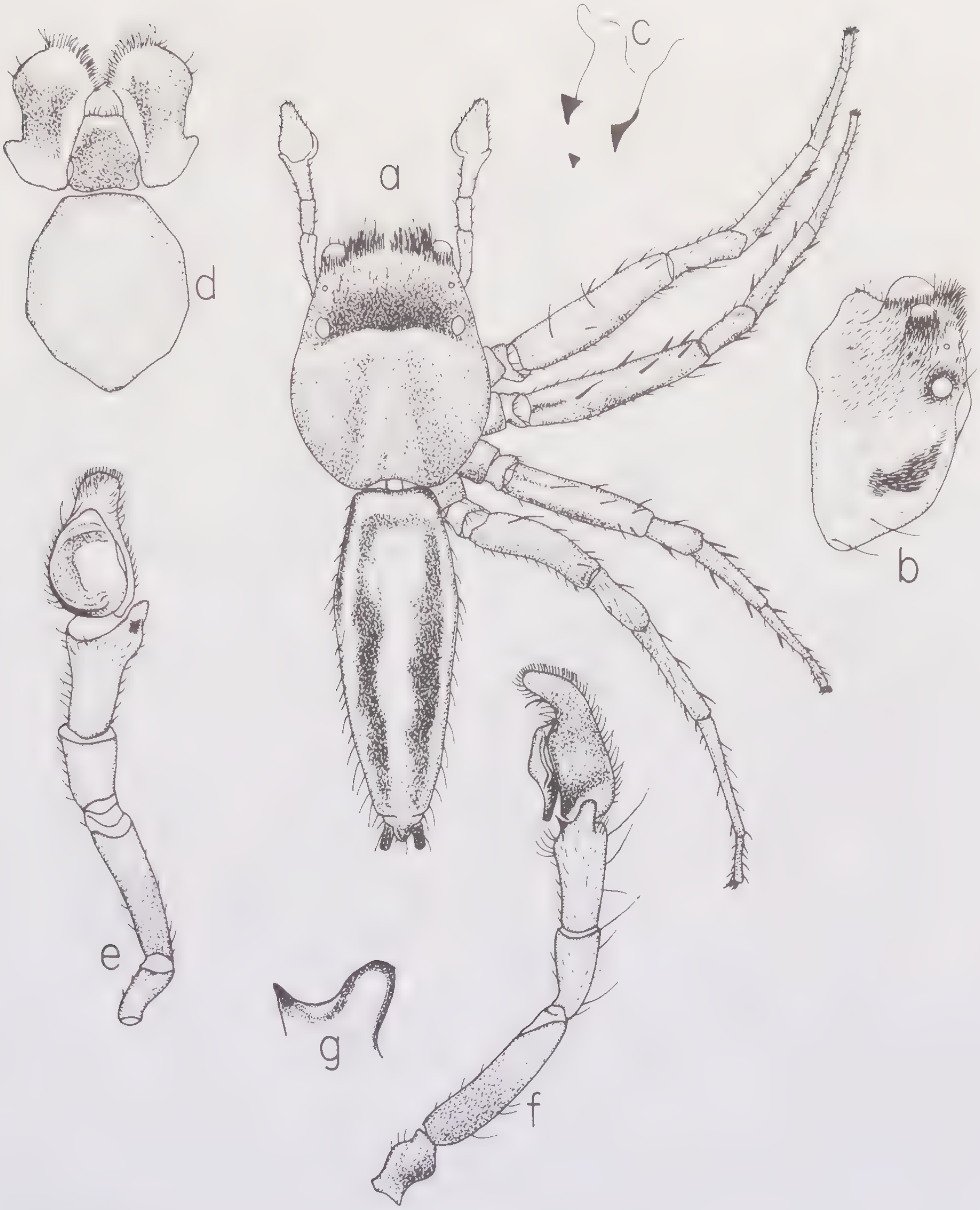

Fig. 32. Male *Cosmophasis estrellaensis* n. sp. (a); side view of carapace (b); cheliceral teeth (c); sternum, labium, and maxillae (d); ventral (e) and lateral (f) views of pedipalp; and apophysis of tibia (g).

Cosmophasis parangpilota new species
(Fig. 33a–g)

Description:

Male: Total length 6.70 mm. Cephalothorax 2.80 mm long, 2.10 mm wide, 1.30 mm high. Abdomen 3.90 mm long, 1.80 mm wide, 1.40 mm high. Cephalothorax uniformly brown except black eye margins, reddish brown short fovea, and four or five pale brown striae in the thoracic area directed to the posterior end of fovea, eye area with almost uniformly spaced long setae. Subposterior end of thorax bear four erect setae in a transverse row. Eye rims of AME with white hairs. Eye diameter (mm): AME = 0.50, PLE = 0.29, ALE = 0.28, PME = 0.06. Eye separation (mm): PME–PME = 1.48, PLE–PLE = 1.38, ALE–PME = 0.38, PME–PLE = 0.30, ALE–AME = 0.11, AME–AME = 0.06. Length of PLE rows = 1.75 mm, AE row = 1.65, PME row = 1.55. Sternum, labium and maxillae yellow to yellowish brown. Labium longer than wide with a trun-

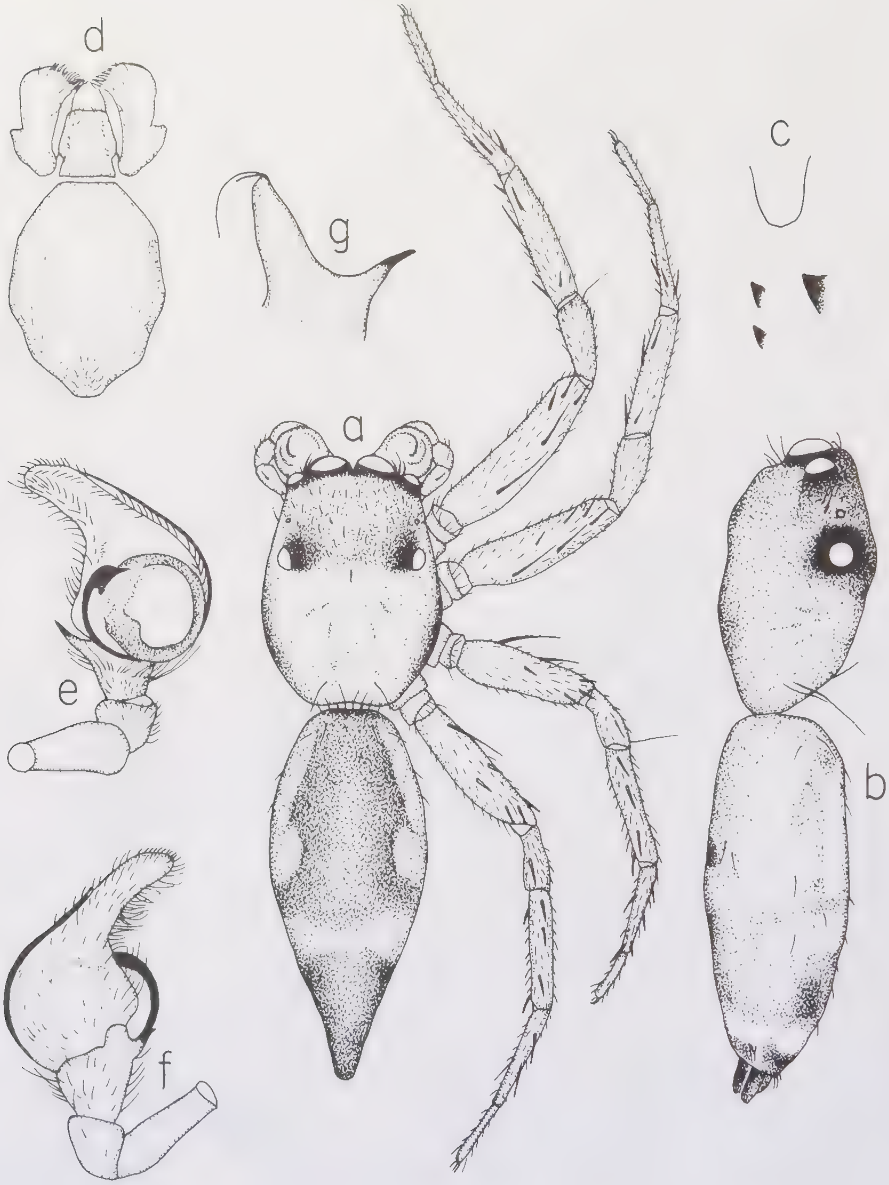

Fig. 33. Male *Cosmophasis parangpilota* n. sp. (a); side view of body (b); cheliceral teeth (c); sternum, labium, and maxillae (d); ventral (e) and lateral (f) views of pedipalp; and tibial apophysis (g).

cated apex. Maxillae without a constricted outer lateral midhalf. Chelicerae with a very small and short fang, promargin with two teeth and retromargin unidentate (with a single tooth). Legs yellow becoming yellowish brown in the tibiae and metatarsi, tibia I and II each with six (2-2-2) ventral spines, tibia III with only four ventral spines; metatarsi III with four ventral spines. Leg formula 4123 (excluding tarsal length – tarsi I and III are missing). Pedipalp almost twice the length of tibia IV, tibia saucer-like in top view, wider than long, RTA bifurcate, bluntly rounded dorsally, with a sharply pointed sclerotized black tip ventrally, moderately thick transverse row of long hairs visible opposite RTA terminating in a small tubercle. Cymbium strongly sickle-shaped like a pelota (jai alai) racket, swollen and globular in the basal half and slender in the rest with an obliquely truncate tip. Tegulum subglobular without apophysis. Left embolus long and spiniform arising midretrolaterally, overall length circles tegulum, and curves clockwise.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.60	0.95	1.33	1.20	–	5.08
2	1.50	0.80	1.30	1.10	0.60	4.70
3	1.40	0.75	1.20	1.25	–	4.60
4	1.90	0.80	1.55	1.50	0.55	6.30
Pedipalp	0.90	0.33	0.45	–	1.41	3.09

Abdomen elongate, tapering posteriorly, grayish green with pale yellow bands laterally in apical half and a transverse yellow band in posterior third. Venter with a broad median gray band and yellow lateral edges. Spinnerets slender and parallel with each other, wrapped with

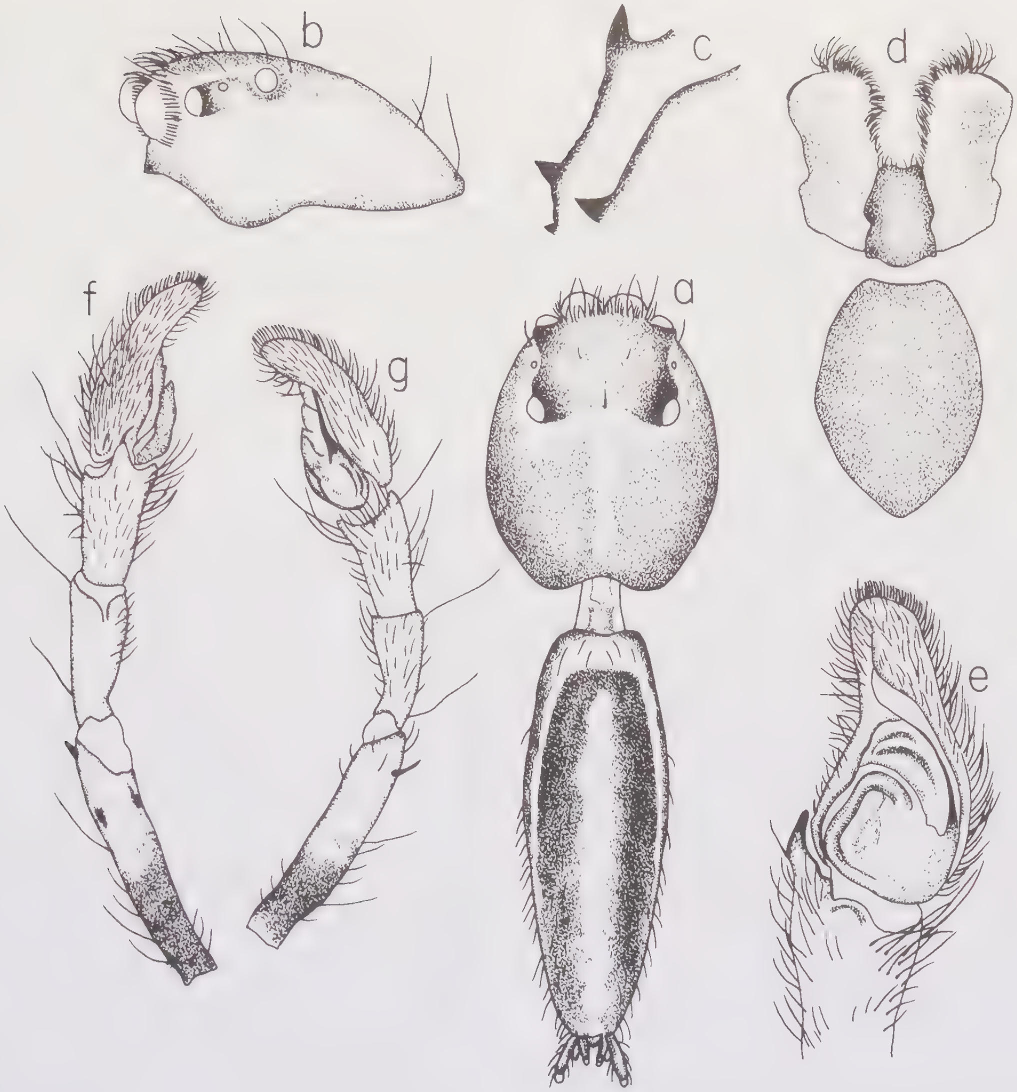

Fig. 34. Male *Cosmophasis trioipina* n. sp. (a); side view of carapace (b); cheliceral teeth (c); sternum, labium, and maxillae (d); ventral view of cymbium and tibia (e); and lateral views (fg) of left pedipalp.

gray to black hairs, anterior almost contiguous basally and about as long as the posterior pair, posterior spinnerets converge apically.

Etymology: Named after the shape of the cymbium, similar to the racket used in playing jai alai (pelota).

Natural history: Isolated from the D-Vac collections taken from a clean field wetland rice at 45 days after transplanting (DT) in August.

Material examined: PHILIPPINES: *Mindanao Is.*, Zamboanga del Sur Prov., Molave, holotype male, 10 August 1979, A.T. Barrion.

Distribution: Philippines.

Cosmophasis trioipina new species
(Fig. 34a–g)

Description:

Male: Total length 8.30 mm. Cephalothorax 3.40 mm long, 2.65 mm wide, 2.00 mm high. Abdomen 4.90 mm long, 1.80 mm wide, 1.65 mm high. Cephalothorax reddish brown with iridiscent green hairs around lateral and posterior margins, posterior to PLE and between PME and black eye margins. Cephalic area flat in the PE area and higher than thorax. Eye row length (mm): AE = 2.00, PLE = 1.93, PME = 1.75. Eye diameter (mm): AME = 0.61, PLE = 0.30, ALE = 0.28, PLE = 0.10. Eye separation (mm): PLE–PLE = 1.48, PME–PME =

1.60, PME–PLE = 0.35, PME–ALE = 0.40, ALE–AME = 0.10, AME–AME = 0.05. Clypeus height relatively large, approximately 0.45 times AME diameter. Sternum dark brown and ovoid, longer than wide, anterior end slightly concave and posterior end a rounded point. Labium reddish brown except yellow apex, longer (0.80 mm) than wide (0.50 mm), and its tip beyond midlength of maxillae. Maxillae constricted at outer midhalf, rounded towards apex, with scopulae on apical inner lateral one third. Chelicera reddish brown and robust. Promargin with three widely spaced teeth, apical the largest and inclined upwards, second tooth closer to third than to the apical one. Basal promarginal tooth minute. Retromargin with a basal tooth. Scopulae developed between apical and second tooth. Legs brownish red, femur I enlarged, dorsum of tibia with an erect seta in basal one eighth of its length, venter of tibia I with six (2-2-2) spines, and metatarsi I with only two (0-2-2) pairs of ventral spines. Leg formula 2143. Pedipalp longer than combined length of femur + patella IV, yellow with brown cymbium and basal half of femur. Dorsum of femur bears an apical spine, patella and tibia each with a long dorsoapical seta. RTA dark brown, well-sclerotized apex sharply pointed and curved inwards, midpart and subbasal inner portion each with a bulbous area. Left embolus emanates from the inner midlateral of tegulum moving clockwise, its tip leading to a narrow groove in cymbium. Sperm duct visible on the midapex of tegulum, looping along its edges.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.50	1.80	1.65	0.70	8.15
2	2.40	1.30	2.25	2.05	0.75	8.75
3	2.20	0.95	1.50	1.75	0.65	7.05
4	2.35	1.00	1.85	2.20	0.70	8.10
Pedipalp	1.25	0.78	0.63	–	0.93	3.59

Abdomen dark brown except a white median longitudinal band and a long inverted U-shaped yellow band along margins, venter brown except for two pairs of elongated white lateral bands and a transverse one before posterior end. Spinnerets borne on a yellowish white base, anterior pair slightly cynlindrical with its apical segment hardly visible and has a diameter twice that of the slender posterior pair. Apical segment of the posterior pair minute, as long as wide.

Etymology: Named after the three promarginal teeth (trio = three + ipin = teeth + a).

Natural history: The holotype male was handpicked from a mound of rice straw in August.

Material examined: PHILIPPINES: *Luzon Is.*, Albay Prov., Legaspi, holotype male, 28 August 1987, J.L.A. Catindig.

Distribution: Philippines.

Genus *Phintella* Strand

Phintella Strand in Boesenberg and Strand, 1906. Abh. Senck. Naturf. Ges. 30: 333.

Moderately small spiders (ca. 3–7 mm long) with slender and dominantly pale gray-brown body color. Abdomen often with transverse light and dark streaks, or pale with gray indistinct linear patterns. Metallic luster in the cuticle and scale-like setae present. Tegulum extended posteriorly to the tibia. Males have simple palpal organ, rather uniform in the genus, and bear a single tibial apophysis. Epigynum of females with spherical simple spermathecae located posteriorly; copulatory canals short and broad; accessory glands with double openings, the second overlapping fertilization canals.

Phintella bunyiae new species
(Fig. 35a–f)

Description:

Female: Total length 4.51 mm. Cephalothorax 1.70 mm long, 1.00 mm wide, 0.95 mm high. Abdomen 2.84 mm long, 1.50 mm wide, 1.13 mm high. Cephalothorax brown with a narrow pale yellow median longitudinal band, black eye margins, with white hairs along the lateral sides of carapace and thorax, and brown hairs in the AE row between AME–AME and AME–ALE. Fovea brown, very short and barely one-third diameter of PLE. AE row recurved and as wide as PLE row. Eye diameter (mm): AME = 0.31, ALE = 0.16, PME = 0.05, PLE = 0.15. Eye separation (MM): PME–PME = 0.75; PLE–PLE = 0.70; AME–AME = AME–ALE = 0.04; ALE–PME = 0.19, PME–PLE = 0.18. Length of eye row (mm): AE = PLE = 0.93, PME = 0.81. Sternum gray-brown with tiny yellow dots, anterior margin truncate, lateral opposite each coxae almost straight, and posterior margin bluntly rounded between coxae IV. Labium yellow with brown broad base and apex moderately truncate. Maxillae yellow, rounded anteriorly with scopulae on anteromedial edges, outer midlateral half strongly indented. Chelicerae vertical, yellow and small. Promargin and retromargin with two and one teeth, respectively. Legs short; yellow with brown spines and black to gray bands in the posterodorsolateral parts of coxae III and IV. Femora I with three dorsal, one apicoprolateral, and one apicoretrolateal spines. Tibia I with two or three dorsal trichobothria in the basal one fourth, one erect bristle in the apicodorsal four fifths, and three pairs of ventral spines. Metatarsi I with two pairs of ventral and one each of prolateral and retrolateral spines. Tarsi two-clawed, each claw with 12 teeth in leg I, basal one third of claw bent, slender, and without teeth. Leg formula 4312. Pedipalp yellow, total length less than combined length of patella and femur of leg IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.68	0.33	0.53	0.38	0.30	2.22
2	0.56	0.23	0.45	0.39	0.29	1.92
3	0.71	0.26	0.48	0.60	0.34	2.39
4	0.85	0.30	0.60	0.65	0.35	2.75
Pedipalp	0.38	0.20	0.19	–	0.31	1.08

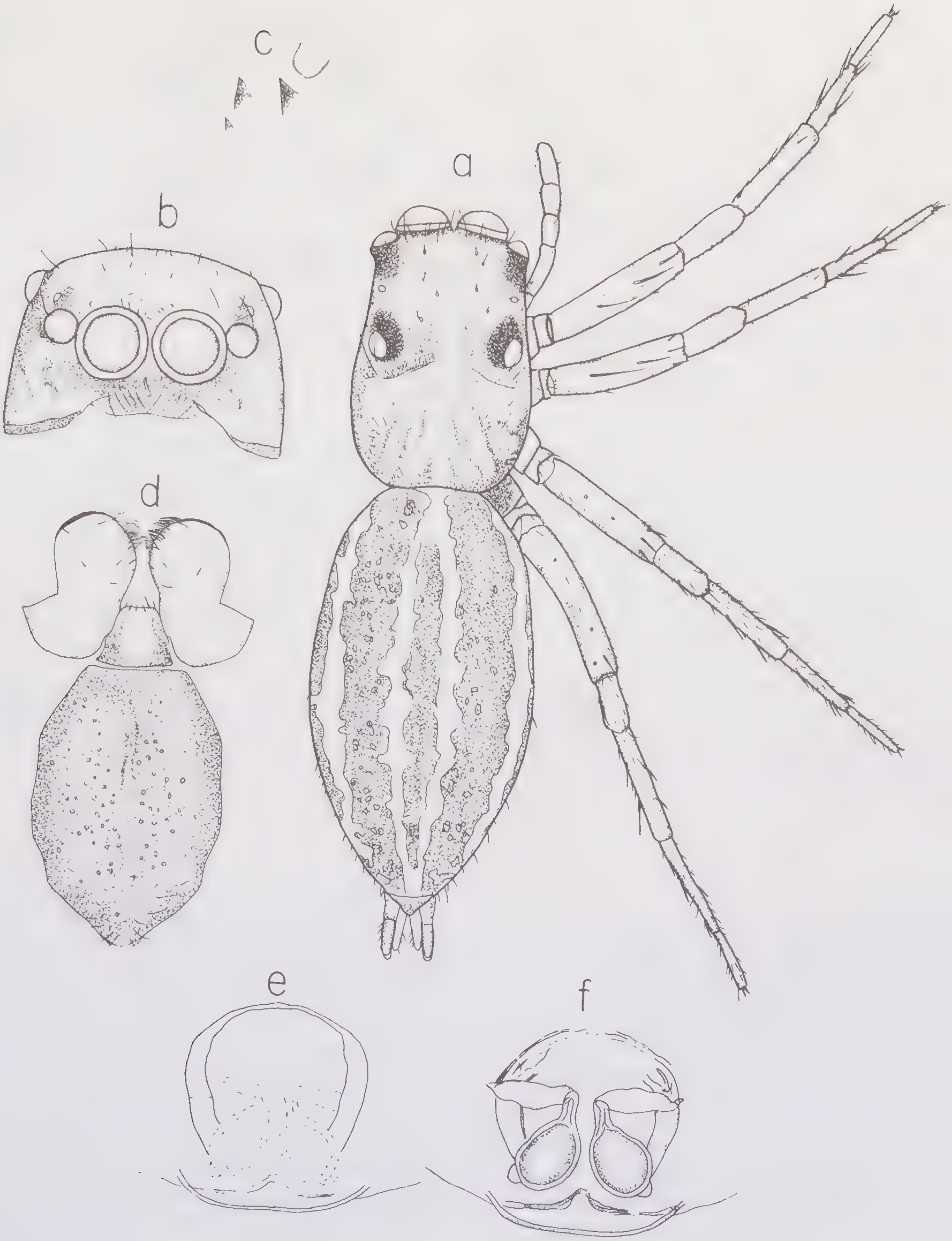

Fig. 35. Female *Phintella bunyiae* n. sp. (a); frontal view of head (b); cheliceral teeth (c); sternum, labium, and maxillae (d); and dorsal (e) and ventral (f) views of epigynum.

Abdomen longer than wide, AbL/AbW = 1.89, brown with a pair of dorsal longitudinal yellow bands and one each in the laterodorsal portion. Sides and venter of abdomen brown with yellow mottles. Anterior spinnerets gray, short but more robust than yellow and slender posterior pair. Both sides of the posterior pair with a thin longitudinal black stripe. Epigynum bears a pair of oblong spermathecae with a distinct half-circular hood anteriorly.

Etymology: Named after Miss Nonnie Bunyi who dedicated countless hours to complete this book.

Natural history: The relatively small female specimen was collected through vial-tapping from a stunted, 40-day-old rice plant in September with two leaffolder

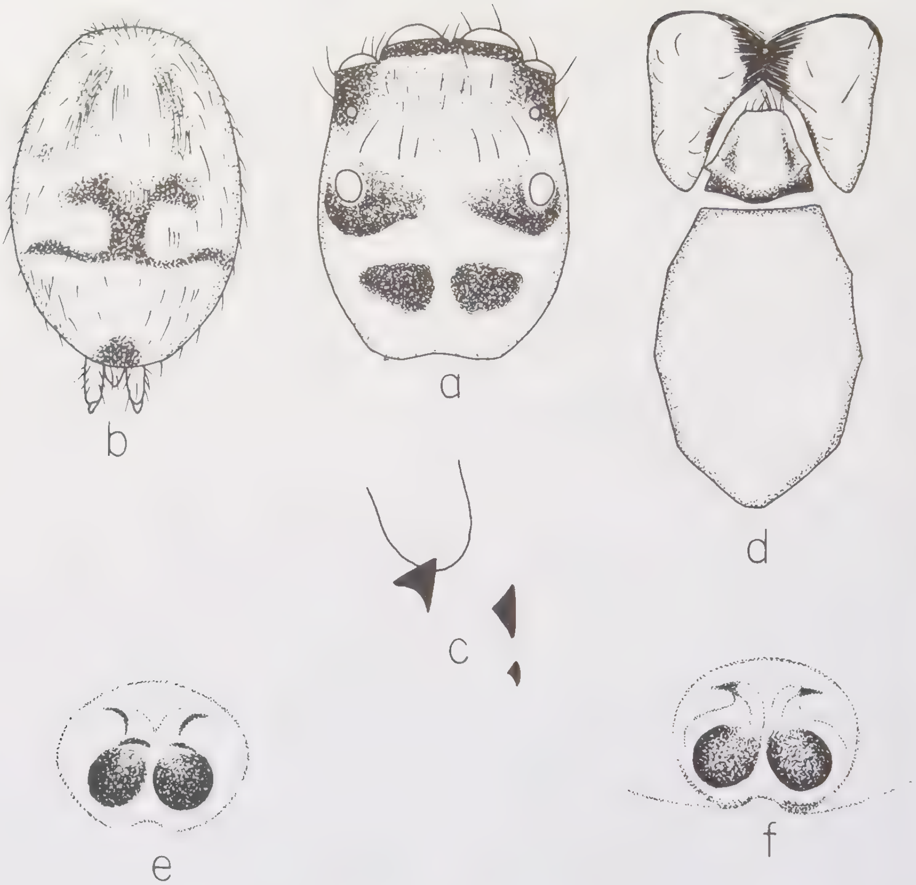

Fig. 36. Female *Phintella piatensis* n. sp., dorsal view of carapace (a) and abdomen (b); cheliceral teeth (c); sternum, labium, and maxillae (d); and dorsal (e) and ventral (f) views of epigynum.

larvae in between chelicerae.
Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Iloilo, Tigbauan, Rizal Vill., holotype female, 15 September 1978, M.D. Lumaban.
Distribution: Philippines.
Remarks: *P. bunyiae* n. sp. runs close to *P. debilis* (Thorell) from India and Vietnam but differs in shape of epigynum and dorsal abdominal pattern.

Phintella piatensis new species
(Fig. 36a–f)

Description:
Female: Total length 4.28 mm. Cephalothorax 2.00 mm long, 1.52 mm wide, 1.04 mm high. Abdomen 2.28 mm long, 1.32 mm wide, 1.20 mm high. Cephalothorax yellow-brown except black margins of eyes and paired ovoid spots anterior and posterior to fovea, broadest below PLE and sloping posteriorly, ocular area not elevated, occupies nearly half of carapace length, with sparse brown erect hairs and white hairs behind AE and between PLE and PME. Eye row length (mm): AE = 1.33, PME = 1.18, PLE = 1.30. Eye diameter (mm): AME (0.41) > ALE (0.21) > PLE (0.20) > PME (0.08). AME separation 0.12 eye diameter. AME–ALE separation as long as PME diameter. PME slightly nearer to PLE than ALE. PME–PLE = 0.28 mm. PME–ALE = 0.30 mm. ALE in line with the black rim of AME, PME encompassed in the tip of a black band extending posteriorly from ALE. Clypeus height very small, nearly touches AME. Labium and maxillae yellow, with brown hairs on basal one third of labium, which is indented along margin, anterior almost truncated. Scopulae of maxillae converging. Chelicerae yellow-brown, two promarginal teeth and one retromarginal. Sternum longer (0.78 mm) than broad (0.56 mm), oval, widest between coxa II, apical margin as broad as base of labium. Legs yellow with brown spines and claw tuft, spination formula of tibia I = 1-5-1-2, dorsum with three trichobothria; tibia IV spination = 1-3-2-3 and three trichobothria. Metatarsus IV = 6–2–1–1. Leg formula 3412.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.86	0.46	0.70	0.64	0.40	3.06
2	0.76	0.44	0.68	0.64	0.40	2.92
3	1.40	0.46	0.96	1.04	0.56	4.42
4	1.12	0.46	1.00	1.04	0.56	4.18

Abdomen ovoid, yellow green with a transverse grayish brown band medially, nearly bisected by an interrupted white band, posterior half bears grayish

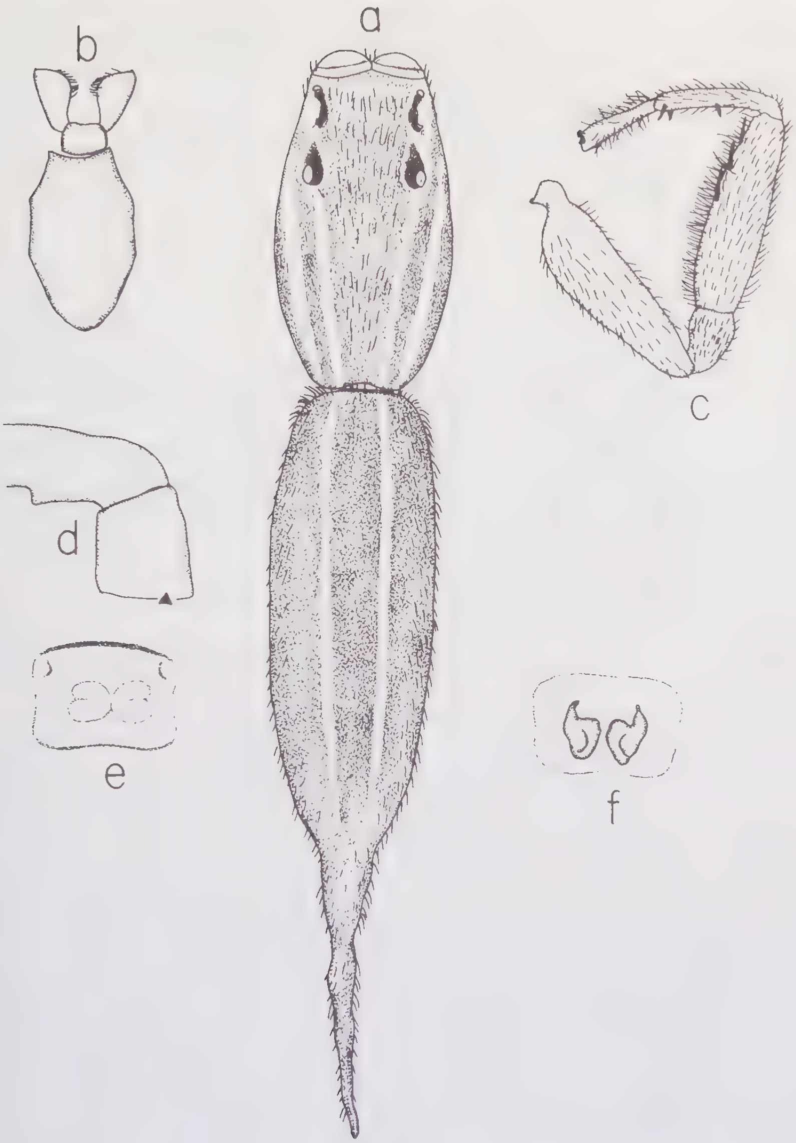

Fig. 37. Female *Mantisatta longicauda* Cutler and Wanless (a); sternum, labium, and maxillae (b); leg I (c); basal segment of metatarsus I showing tubercle (d); and dorsal (e) and ventral (f) views of epigynum.

brown spots, a black spot above and tubercle and a pair more along lateral margins. Venter of abdomen uniformly yellow without gray spots. Spinnerets yellow, posterior and anterior subequal in length, anterior more robust than posterior. Epigynum spherical with a notched posterior epigynal margin, diverging anterior epigynal margin and circular spermathecae.

Etymology: Species name derived from the type locality.

Natural history: The holotype female specimen was collected by D-Vac suction machine in September from a hilly grassland field dominated by *Imperata cylindrica* L. It was observed preying on *Balclutha* and *Macrosteles* cicadellids collected along with *P. piatensis.* Two paratype females were bagged from rice plants in February, one with a wing of *Cnaphalocrocis medinalis* in its chelicera. A paratype spiderling was collected from rice associated with *Sogatella furcifera* (Horvath).

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Piat Vill., holotype female, 21 September 1981, A. T. Barrion; two females, Gadu Vill., 24 February 1982, R. Siose, paratype spiderling, Gadu Vill., 21 September, M. Perez.

Distribution: Philippines.

Genus *Mantisatta* Warburton

Mantisatta Warburton, 1900. Proc. Zool. Soc. Lond.: 385.

A very small Oriental genus of jumping spider comprising only two species. *M. trucidans* Warburton, 1900 occurs in Borneo and *M. longicauda* Cutler and Wanless, 1973 is from the Philippines. The genus is very similar to *Hyctia* Simon, 1876 in terms of slender body size and tail-like abdomen. *Mantisatta* Warburton, however, are sexually dimorphic. Females have longitudinal white stripes running from carapace to the abdomen and posses pointed abdominal tip. Males are usually black with yellowish brown legs and black pedipalp except tibia and tarsus yellow. In both sexes, leg I stout and prominently longer than legs II to IV. Tibia I stout, usually with six pairs of prolateral spines. Metatarsus I slightly curved basally like a sickle.

Mantisatta longicauda Cutler and Wanless
(Fig. 37a–f)

Mantisatta longicauda Cutler and Wanless, 1973. Bull. Br. Arachnol. Soc. 2: 185–189.
Hyctia sp. Amalin, 1981. Jumping spiders of Mt. Makiling and its vicinity. Dept. Entomology, U. P. Los Baños: 64–66.

Redescription:
Female: Total length 8.08 mm. Carapace 2.08 mm long, 1.20 mm wide, 0.50 mm high. Abdomen 6.00 mm long, 1.00 mm wide, 0.55 mm high. Cephalothorax longer than wide, green tinged yellow and grayish black longitudinal stripes extended to the abdomen (in alcohol it turned white with a yellow background instead of green), eye margins black and prominent in ALE to PLE, AME with light brown eye rims, fovea absent, entire cephalothorax generally flat dorsoventrally and rather hirsute with slightly elevated proximal part of thorax and widest posterior to PLE between coxae II and III. Eight eyes in four rows (three rows considering AE row strongly recurved). Distance between eyes (mm): PLE = 0.86, ALE = 0.85, PME = 0.78, and AME = 0.66. Eye diameter (mm): AME = 0.34, ALE–PLE = 0.12, and PME = 0.04. AME biggest and separated only by one seventeenth AME diameter. AME–ALE separation three times AME separation or one-half ALE diameter, PME smallest and widely separated ca. 18 times eye diameter. PLE separation 7.2 times eye diameter. ALE with a brown transverse ridge in between. Clypeus level with base of AME and indiscernable. Sternum yellow, longer (0.86 mm) than broad (0.50 mm) concave apically and rounded posteriorly, lateral margins straight to slightly indented opposite coxae I and II. Labium yellow, wider (0.26 mm) than long (0.20 mm), base narrower than apex of sternum and distal end rounded. Maxillae longer than wide, inner half yellow and outer half yellow brown, pointed towards base and rounded distally, scopulae thick above labium. Chelicerae small, yellow and vertical with three teeth each in the promargin and retromargin. Legs uniformly yellow except black claw hair tuft, leg I very stout with enlarged femora and tibiae, spineless except apicoventral half of tibia I with three pairs of ventral spines and metatarsus I with two pairs of ventral spines, basal portion of metatarsus I segmented-like, ventral hump or tubercle present in metatarsus I above first pair of ventral spines, tarsus two-clawed and hidden in thick hair tuft, each claw with eight to 14 teeth. Leg formula 1423. Pedipalps yellow and hairy along tarsus, femora as long as femora of leg III without claws.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.56	0.64	1.72	1.16	0.56	5.64
2	0.76	0.42	0.60	0.42	0.26	2.46
3	0.60	0.34	0.42	0.48	0.24	2.08
4	0.88	0.40	0.80	0.68	0.32	3.08
Pedipalp	0.60	0.25	0.27	–	0.27	1.39

Abdomen green with three broad grayish black longitudinal bands (extension from thorax), basal half much broader than the pointed or tail-like apical half with a black band before tip, rather flat with a slight hump dorsad of spinnerets, thinly covered with small hairs. Epigynum a small rectangular yellow band with a ribbon-like mark medially. Spinnerets yellow and hidden underneath abdomen at midlength directed diagonally outward, posterior pair a little longer than the anterior pair.
Variation: All female specimens examined range 6.5–9.5 mm in body length. Shorter females had shorter spinnerets and possessed no black bands.
Natural history: The first specimen was collected by D-Vac suction machine from white maize intercropped with bush sitao (cross between cowpea and yard long bean) in January. The rest were vial-tapped from the lower epidermis of a dwarf coconut in August. They were hidden beneath a white silken cocoon, sometimes with ca. 10–15 spherical eggs. Three females and three spiderlings were collected by sweep net in ricefields in September and October.
Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Janopol Vill., one female, 19 January 1979, A.T. Barrion; Laguna Prov., Los Baños, Umali Subdivision, three females, in University of the Philippines at Los Baños collection of D. Amalin, 15 August 1981, A.T. Barrion; two females and three spiderlings, IRRI Farm (Block F and H), 14 September 1985, M. Perez, one female, 12 October 1994, E. Rico.
Distribution: Philippines.

Genus *Telamonia* Thorell

Viciria Thorell, 1877. Ann. Mus. Stor. Nat. Genova 10: 373 (part.).
Telamonia Thorell, 1887. Ann. Mus. Stor. Nat. Genova 25: 385.

Telamonia Thorell spiders are moderately large and beautifully colored, quite similar to *Epeus*. The genus is Oriental in its distribution, represented by approximately 40 nominal species. The most distinguishing character separating it from *Epeus, Phintella* and other genera is the presence of short thick bristles on the lateral edges of the cymbium of the male pedipalp. Female epi-

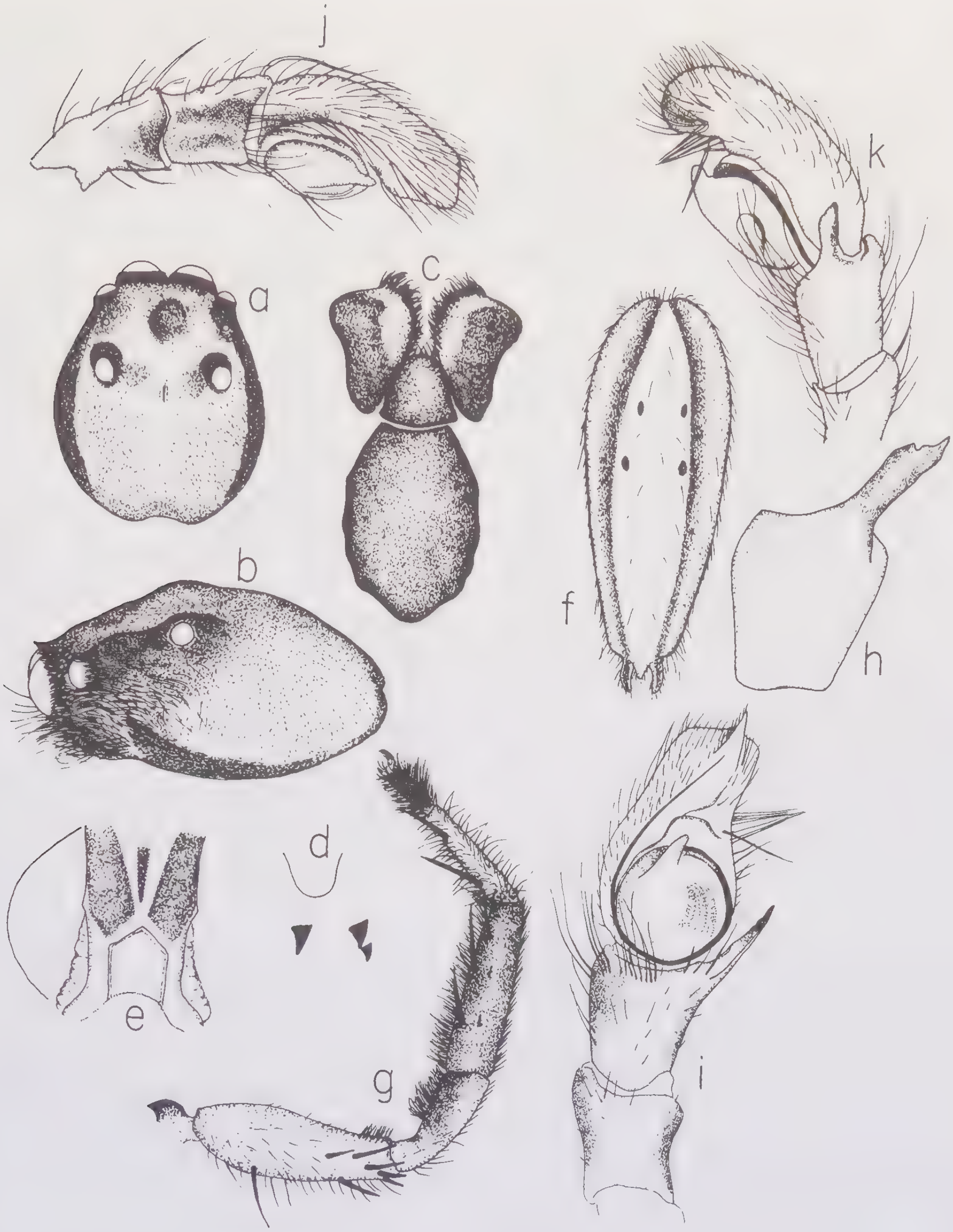

Fig. 38. Male *Telamonia masinloc* n. sp., dorsal (a) and lateral (b) views of carapace; sternum, labium, and maxillae (c); cheliceral teeth (d); pedicel (d); abdomen (f); leg I (g); retrolateral tibial apophysis (h); and ventral (i) and lateral (jk) views of pedipalp's patella, tibia, and tarsus.

gynum is usually dome-shaped with a pair of dark orifices separated by a pair of ducts medially.

Telamonia masinloc new species
(Fig. 38a–k)

Description:

Male: Total length 8.50 mm. Cephalothorax 3.56 mm long, 3.00 mm wide, 1.94 mm high. Abdomen 4.94 mm long, 2.11 mm wide, 2.11 mm high. Carapace subglobular, yellow dorsally with a reddish brown marginal band from base of thorax ending at PLE. Ocular area black, darker on the eye margins and occupies less than one half carapace length. Eye diameters (mm): AME = 0.70, ALE = PME = 0.33, PLE = 0.08. Eye separation (mm): AME-AME = 0.08 mm, about 0.11 eye diameter. AME-ALE = 0.13 mm, about 0.18 AME diameter. PLE closer to ALE than PME. PLE-ALE =

0.39, PLE–PME = 0.48. Lateral margins of carapace, clypeus, and eye margins with white hairs. Clypeus relatively wide, one third AME diameter. Chelicerae dark brown with two promarginal and one retromarginal teeth. Maxillae twice longer than broad, broadest apically with a whitish yellow inner apical margin. Sternum dark reddish brown, oblong, with a rounded posterior end, anterior end concave and narrower than the basal width of labium. Height of labium less than one half length of maxillae. Legs yellow except dark reddish brown ventral coxae, dorsum of femora, patella, tibiae, basal half of metatarsi I and II, black tarsi. Leg I with long white hairs. Fringes on ventral edges of apical one third of femur I, venter of patellae I and II, dorsal and ventral part of tibiae I and II, basoventral one third of metatarsi I and II, and tarsi I and II. Spination formula of tibia I = 0-6-3-0. Metatarsus I = 0-4-0-0, tibia III = 0-2-2-3, IV = 0-3-2-3. Leg formula 1432. Pedipalp reddish brown, slightly shorter than femur IV. RTA serrated and pointed at tip. Cymbium with five or six horizontal setae on the curved apical one third, anterior tip with an oblique cut lined with short white hairs. Tegulum bears an apical white process. Right embolus runs counterclockwise, its tip in a groove.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.83	1.58	2.50	1.66	1.16	9.73
2	2.66	1.42	2.00	1.50	1.08	8.66
3	2.66	1.08	2.00	2.16	1.25	9.15
4	3.00	1.33	1.83	2.16	1.16	9.48
Pedipalp	1.10	0.48	0.39	–	1.00	2.97

Pedicel twice longer than broad with broken V-shaped band on the apical half and a white to transparent flap on lateral margins. Abdomen tapers posteriorly, broadest on the basal one third, with a yellow median band and four maculae dorsally, reddish brown subdorsal bands, white laterally and black venter. Spinnerets black.

Etymology: Named after type locality.

Natural history: The single male was collected from a 2 m tall mango tree at the center of a hill with irrigated wetland ricefields circling it, in October. It was observed feeding on mango leafhoppers, *Idioscopus* spp. and caught with a dictyopharid, *Chanitus sp.*, in between its chelicerae. In the laboratory, it preyed on 11 adults of *Nephottetix virescens* (Distant) and eight macropterous females of *Nilaparvata lugens* (Stal) in a day released inside a cylindrical Mylar cage with a pot of three-tillered IR36 rice plants.

Material examined: PHILIPPINES: *Luzon Is.*, Zambales Prov., Masinloc, holotype male, 14 October 1982, A.T. Barrion.

Distribution: Philippines.

Telamonia parangfestiva new species

(Fig. 39a–h)

Description:

Female: Total length 9.63 mm. Carapace 3.80 mm long, 2.80 mm wide, 2.20 mm high. Abdomen 5.83 mm long, 1.80 mm wide, 1.94 mm high. Cephalothorax yellow except blackish brown eye margins, short fovea close to mid-PLE, broadest along coxa II, cephalic area elevated, and thoracic area diagonally sloped at about 60° angle, with three or four long white hairs on each side and partially notched posterior end, ocular area with white hairs and three brown spots forming a triangle, four long hairs between ALE and PLE, three posterior to each PLE, PE on a moderate tubercle. Eye diameter (mm): AME = 0.78, ALE = PLE = 0.28, PME = 0.11. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.28, as long as one ALE diameter. ALE–ALE = PLE–PLE. ALE–PME = 0.30; PME–PLE = 0.45; PLE–PLE = 1.45; PME–PME = 1.49. Clypeus height about 0.24 AME diameter, wider than PME diameter. Sternum longer (1.56 mm) than wide (1.00 mm), elongate, broadest between coxae II and III, notched opposite both coxae III and IV, posterior tip rounded and apical part straight. Labium longer (0.65 mm) than wide (0.45 mm), notched mediolaterally, base shorter than apical width of sternum. Maxillae longer (0.82 mm) than wide (0.67 mm), ovate and pointed basally, distal ends dark brown with yellow-brown scopulae. Left chelicerae yellow-brown with two promarginal and one retromarginal teeth and a serrated retromargin with five or six small teeth in the right. Leg spination formulae of femur I = 0-0-1-0, tibiae I = 0-6(2-2-2-0)-0-0, tibia IV = 0-0-0-0, metatarsus I = 0-4(2-2-0)-0-0. Leg formula 1432. Labial palp yellow except brownish tinge apically, tarsi clawless.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	1.50	2.50	1.80	0.85	9.25
2	1.95	1.20	1.75	1.25	0.60	6.75
3	2.10	1.10	1.40	1.85	0.65	7.10
4	2.75	1.00	2.10	2.35	0.70	8.90
Pedipalp	1.05	0.60	0.55	–	0.75	2.95

Abdomen whitish yellow with long brown hairs dorsally, cardiac spot yellow, and tapering abdominal tip with remnants of gray spots. Venter yellow with pair of black spots posteriorly. Anal tubercle distinctly triangular. Posterior spinnerets more slender than anterior, tips with long silk guides or spigots. Epigynum (mounted on slide no. Sal 02 – *Telamonia* in IRRI Reference Collection: Salticidae Accession) a pair of sclerotized lobes separated posteriorly, anterior epigynal margin connected in dorsal view but faded in ventral view.

Etymology: Name derived after its similarity (parang = similar) to *festiva.*

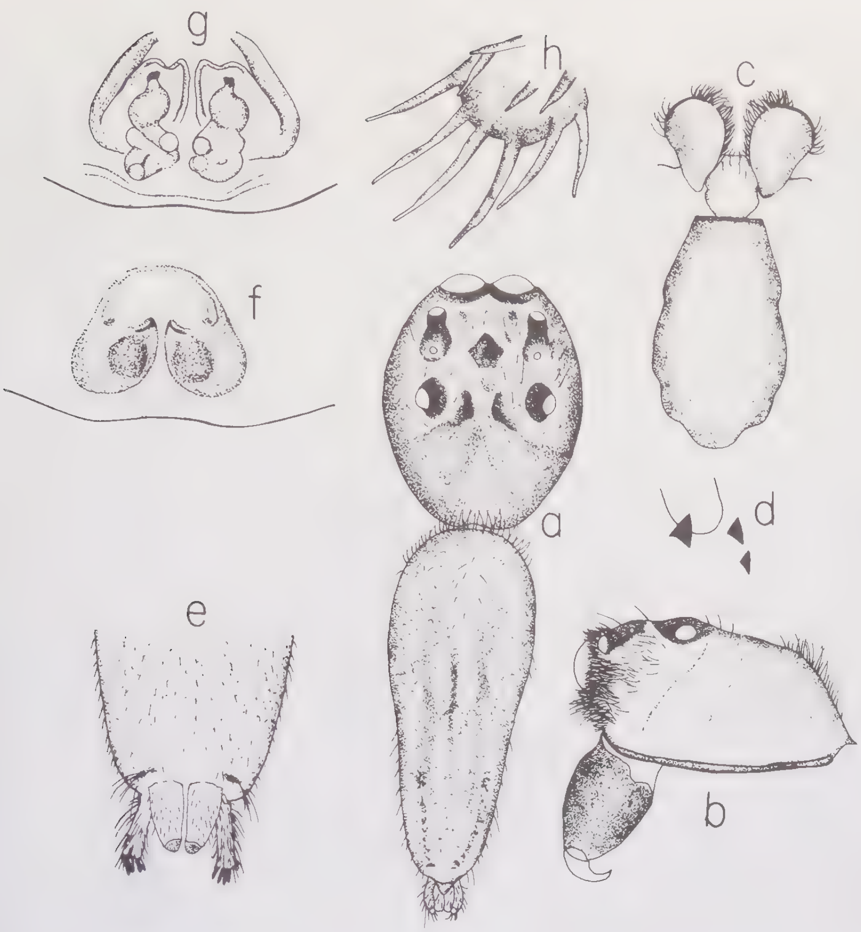

Fig. 39. Female *Telamonia parangfestiva* n. sp. (a); side view of carapace (b); sternum, labium, and maxillae (c); cheliceral teeth (d); posteroventer of abdomen showing spinnerets (e); dorsal (f) and ventral (g) views of epigynum; and spigot (h).

Natural history: The holotype specimen was taken from rolled leaves of coffee trees grown in between two to three meters of upland ricefields in September. The immature paratypes were both vial-tapped from rice leaves and caught feeding on white rice leafhoppers *Cofana spectra* (Distant).
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Hinaplanan Vill., holotype female and two immatures; 23 September 1987, A.T. Barrion.
Distribution: Philippines.
Remarks: All specimens were accidentally cleared in sodium hydroxide.

Genus *Plexippus* C.L. Koch

Plexippus C.L. Koch, 1846. Die Arachniden 13: 107.

The genus *Plexippus* consists of medium-sized jumping spiders, less than 10 mm long, widely represented in most zoogeographical regions of the world. Members of the genus have a high, moderately convex cephalothorax with cephalic sides almost parallel and rounded in the thoracic area. Height of cephalothorax less than one half of its length. The ocular quadrangle occupies approximately one third length of the cephalothorax, AE row barely or not at all wider than posterior eye row. Anterior sternum slightly wider than the base of labium which is noticeably longer than wide. Leg III not longer than I, tibia I with three pairs of ventral spines, and legs I and II similar.

Plexippus calcuttaensis (Tikader)
(Fig. 40a–i)

Marpissa calcuttaensis Tikader, 1974. Proc. Indian Acad. Sci. B. 79(5): 210–211.
Plexippus c., Nenilin, 1984. In Fauna and Ecology of Arachnids, Univ. Perm: 6–37.

Redescription:
Female: Total length 11.33 mm. Cephalothorax 4.25 mm long, 3.33 mm wide, 2.08 mm high. Abdomen 7.08 mm long, 5.48 mm wide,4.00 mm high. Carapace reddish brown except black ocular area, dark brown subdorsal and yellow-brown thoracic area below fovea. Cephalic area narrower than thoracic area. Ocular area nearly one half length of cephalothorax, eyes with long brown hairs dorsal of AE and lateral to PE. Eye

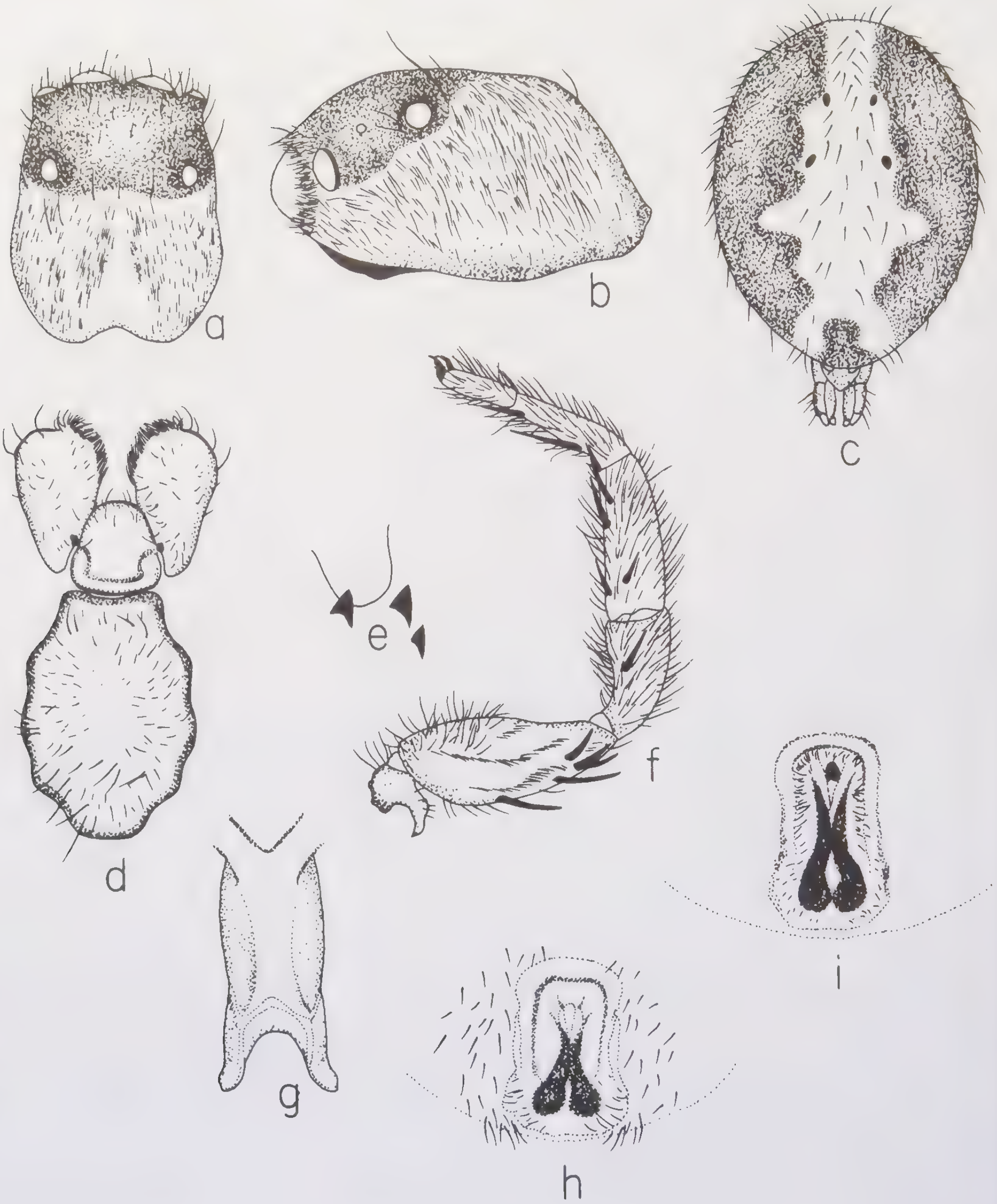

Fig. 40. Female *Plexippus calcuttaensis* Tikader, dorsal (a) and lateral (b) views of carapace; abdomen (c); sternium, labium, and maxillae (d); cheliceral teeth (e); leg I (f); pedicel (g); and dorsal (h) and ventral (i) views of epigynum.

diameters (mm): AME = 0.75, ALE = 0.43, PLE = 0.36, PME = 0.15. AE slightly shorter than PLE (2.62 mm : 2.65 mm). AME separation one fifth eye diameter. AME–ALE separation one fifth AME diameter. PLE–PLE = 2.13 mm. PME–PME = 2.20 mm. Clypeus height twice PME diameter. Maxillae and labium reddish brown except yellow inner tip. Chelicerae each with two promarginal and one retromarginal teeth. Sternum yellow, longer (1.60 mm) than broad (1.12 mm), widest between coxa II, narrowed and bluntly rounded posteriorly, concave anteriorly. Labium broadest basally, its base wider than anterior portion of sternum. Legs brown to reddish brown. Tibia I with one long thin dorsal setal spine, three pairs of ventral spines, and three each of prolateral and retrolateral spines, and metatarsus = 6-4-1-1. Tibia IV = 1-6-0-2 and metatarsus IV = 0-4-0-0. Pedipalps clawless, yellow except brown tibiae and tarsi, femora with 13 long ventral hairs arranged in two rows, tibiae each with zero to one retrolateral spines, tarsi with one each. Leg formula 1234.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.41	1.25	1.83	2.08	1.16	8.73
2	2.00	1.25	1.83	1.58	1.16	7.82
3	2.16	1.33	1.75	1.00	1.00	7.24
4	2.25	1.25	1.58	1.00	1.00	7.08
Pedipalp	1.20	0.60	0.70	–	1.00	3.50

Abdomen globular, brown with a yellow dorsal folium and two pairs of elongated brown maculae, clothed with brown hairs. Venter of abdomen yellowish gray. Spinnerets yellow-brown, relatively long and cylindrical. Anterior spinnerets more slender than the stout posterior spinnerets. Epigynum brown, twice as long as broad, and with a narrow slit-like median piece.

Natural history: A female spider was collected in December on wheat panicle. Another female was taken from rice panicle feeding on *Scirpophaga incertulas* (Walker) moth.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Upland Farm, one female, 17 December 1987, A.T. Barrion, IRRI Block A, one female, 17 December 1987, B. Garcia.

Distribution: India (Tikader, 1974), and the Philippines (new record).

Plexippus petersi (Karsch)

(Fig. 41a–g)

Euophrys petersi Karsch, 1878. Mon.-ber. Akad. Wiss. 1878: 332.

Plexippus petersi Simon, 1903. Hist. Nat. des Araign. 2(4): 728.

Redescription:

Male: Total length 6.50 mm. Cephalothorax 3.20 mm long, 2.20 mm wide, 1.90 mm high. Abdomen 3.30 mm long, 1.65 mm wide, 1.60 mm high. Cephalothorax brown with a pair of broad dark reddish brown bands dorsally; ocular field and laterals of cephalic with white hairs, posterior of AE row with long brown hairs. Fovea black, short and in a shallow cavity. Eye row length (mm): AE = 1.90, PLE = 1.88; PME = 1.70. Eye diameter (mm): AME = 0.58, ALE = 0.30, PLE = 0.25, PME = 0.10. Eye separation (mm): PME–PME = 1.55, PLE–PLE = 1.33, PLE–PME = 0.25, PME–ALE = 0.45, AME–AME = ALE–AME = 0.08. Clypeus height relatively small, about one third AME diameter. Sternum orange-brown with white hairs, longer (1.20 mm) than wide (0.90 mm), anterior end slightly concave and posterior end bluntly rounded. Labium reddish brown with yellow anterior margin. Maxillae similar in color to labium, inner anterolateral areas yellow, bearing yellow-brown scopulae. Chelicerae with one retromarginal and two promarginal teeth. Legs yellow-brown, darker towards tibia and metatarsus of leg I, ventrolateral edges of femur, patella, tibia and metatarsus of leg I, leg II similar except its metatarsus with a blackish brown longitudinal band. Coxae I to III each with a black lateroventral spot. Venter of tibia I and metatarsus I each with four (two pairs) of spines. Subapicodorsal part of tibia has the longest trichobothria and a second longest one at about midhalf. Leg formula 4132. Pedipalp orange-brown with ventral half of femur black, as long as total length of patella + tibia III, retrolateral surface of femur has a patch of thick brown hair subapically. RTA long, sharply pointed, reaching midlength of cymbium. Left embolus directed clockwise with a reddish brown axe-like sclerotized area near its base, tegulum large and has a posterior bulge extended downward to tibia, and apex of hairy cymbium moderately straight to obliquely truncate.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.90	1.05	1.60	1.00	0.75	6.30
2	1.70	0.85	1.20	0.95	0.65	5.35
3	1.85	1.00	1.45	1.20	0.70	6.20
4	1.95	0.90	1.50	1.60	0.78	6.73
Pedipalp	1.00	0.40	0.30	–	0.75	2.45

Abdomen yellow brown with a pair of broad longitudinal brown bands interrupted twice in the posterior one third and about end of abdomen, producing four orange to white-yellow spots. Light areas of abdomen covered with white setae and dark part lined with brown setae. Venter of abdomen yellowish brown. Spinnerets gray-brown.

Natural history: One male was collected from a ricefield damaged by armyworm *Spodoptera mauritia acronyctoides* in September. The other specimen preyed on arymworm *Mythimna separata* (Walker) attacking corn in August.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Gadu Vill., one male, 23 September 1981, A.T. Barrion; *Mindanao Is.*, Bukidnon Prov., Pangantukan, Maramag Vill., one male, 18 August 1981, N.T. Rubalos.

Distribution: China, Japan, Indonesia, New Guinea, Africa, Vietnam, and Philippines (new record).

Remarks: No female specimen collected. Epigynal characters were observed from Zabka (1985)'s spiders of Vietnam.

Plexippus paykulli (Audouin)

(Fig. 42a–f)

Attus paykulli Audouin, in Savigny, 1825. Hist. Nat. 1(4): 172.

A. paykulli Audouin, 1827. Explic. Planch. Arach. Savigny Descr. Egypt 2: 409.

Plexippus punctatus Karsch, 1878. Mitt. Münch. Ent. Ver. 2: 25.

P. paykulli Simon, 1889. J. Asiat. Soc. Beng. 58: 335.

Menemerus crassus Hogg, 1922. Proc. Zool. Soc. Lond. 1922: 307.

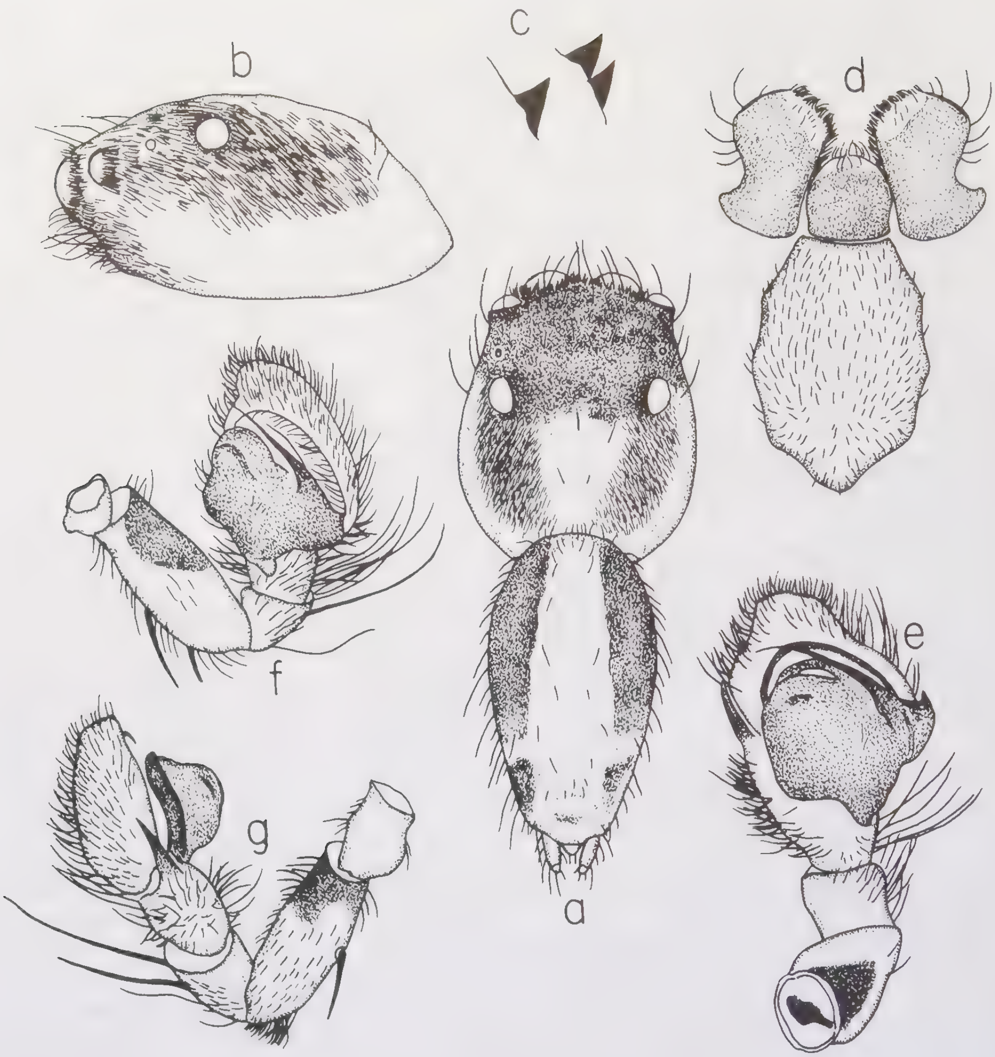

Fig. 41. Male *Plexippus petersi* (Karsch) (a); side view of carapace (b); cheliceral teeth (c); sternum, labium, and maxillae (d); and ventral (e), ventrolateral (f), and lateral (g) views of pedipalp.

Redescription:

Female: Total length 9.25 mm. Cephalothorax 3.60 mm long, 2.70 mm wide, 1.65 mm high. Abdomen 5.65 mm long, 3.40 mm wide, 3.00 mm high. Cephalothorax dark brown except for black eye margin and the yellow median longitudinal band running faintly from midocular area, becoming brighter from short brown fovea to posterior end of thorax. Thin yellow marginal band on each side of cephalothorax. Ocular area with many long brown setae. Eye row length (mm): PLE = 2.25, AE = 2.20, PME = 1.90. Eye diameter (mm): AME = 0.70, PLE = 0.35, ALE = 0.30, PME = 0.10. Eye separation (mm): PLE–PLE = 1.68, PLE–PME = 0.35, PME–PME = 1.63, PME–ALE = 0.45, ALE–AME = 0.10, AME–AME = 0.05. Clypeus height small, one seventh of AME diameter. Sternum yellow with brownish margins, short light brown hairs in the middle, and moderately scattered brown setae along margins, anterior end truncate and posterior tip bluntly rounded anterior to coxae IV. Labium yellow-brown except yellow anterior margin similar to maxillae. Chelicerae strong and developed, retromarginal tooth close to apex near base of fang, and promargin with two teeth arranged near each other similar to *P. petersi*. Legs grayish brown with yellow mottles/spots in all segments except tarsi I–IV. Femora I to IV each with one or two sausage-like yellow bands in the basal one third of the retrolaterals. Venter of tibia II with six (2-2-2) spines, and metatarsi with four (2-2) spines. Leg formula 4132. Pedipalp with gray to black spots and tarsus brown except dorsobasal half grayish to black. Tibia with long dorsal hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.00	1.25	1.50	1.10	0.80	6.65
2	1.80	1.10	1.40	0.85	0.75	5.90
3	2.00	1.00	1.15	1.25	0.90	6.30
4	2.15	1.00	1.60	1.35	0.80	6.90
Pedipalp	0.95	0.35	0.50	–	0.75	2.55

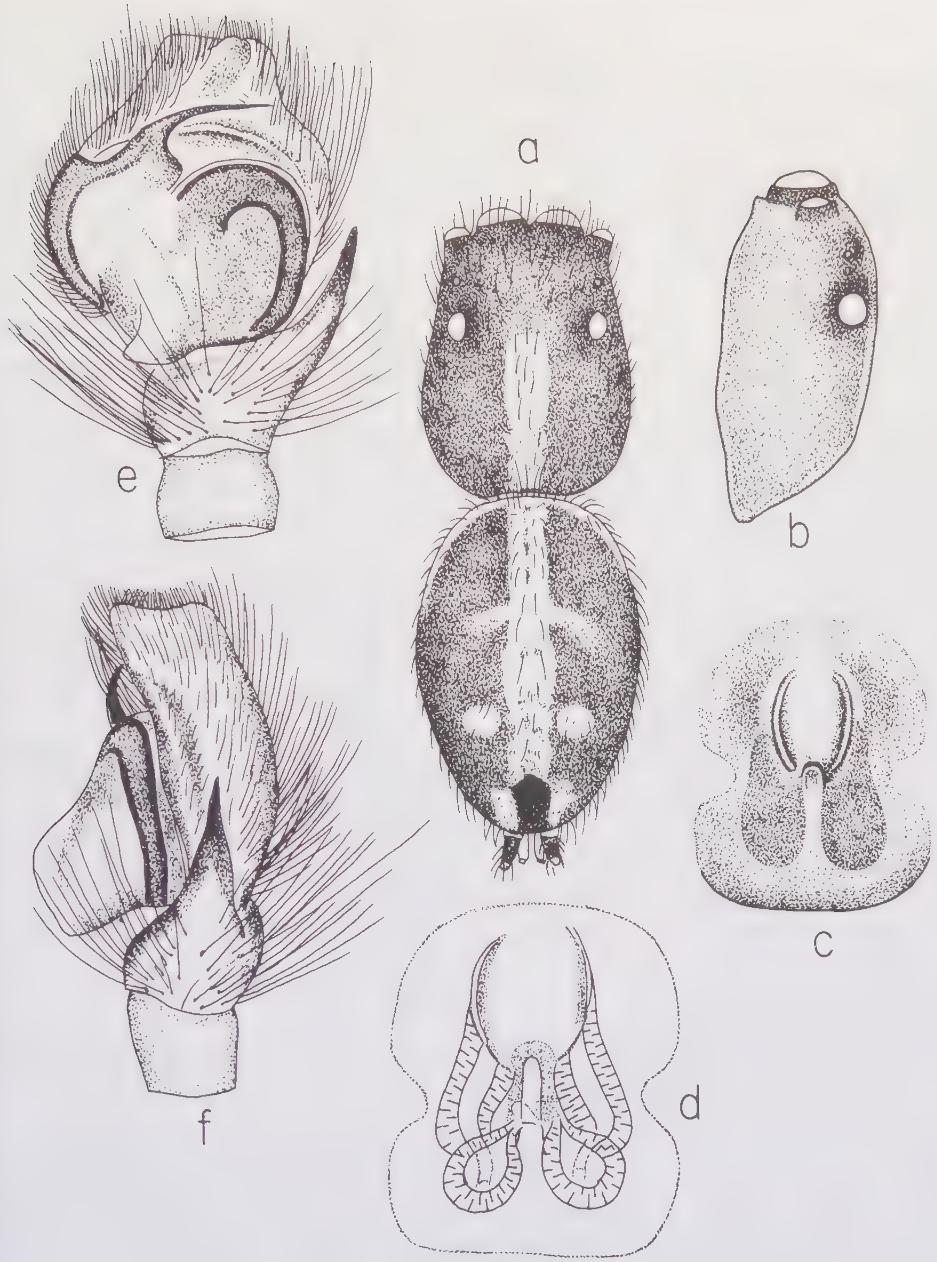

Fig. 42. Female *Plexippus paykulli* (Audouin) (a); side view of carapace (b); dorsal (c) and ventral (d) views of epigynum; and ventral (e) and retrolateral (f) views of male's pedipalp.

Abdomen yellow with a pair of broad longitudinal gray-brown bands converging towards anal tubercle and separated anteriorly by a narrow yellow line, dorsal apical one third of yellow band with a short oblique branch and posterodorsal one third with a pair of globular moderately large yellow spots, and a small pair before the posterior tip of abdomen, sides yellowish gray, venter yellow with numerous brown spots. Spinnerets dark brown with yellow apices, posterior pair slightly longer than the robust anterior pair. Epigynum large with slit-like copulatory openings, broad copulatory canals and ovoid thick-walled spermathecae.

Natural history: The female specimen was taken from a greenhouse culture of green leafhopper (GLH), *Nephotettix virescens* (Distant). It feeds on nymphs and adults of leafhoppers. *P. paykulli* also feeds on nymphs and adults of brown planthopper (BPH), *Nilaparvata lugens* (Stal) in the field and greenhouse colonies of BPH biotypes.

Material examined: **PHILIPPINES:** *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, one female, 8 January 1979, A.T. Barrion.

Distribution: Pantropical.

Genus *Thiania* C.L. Koch

Thiania C.L. Koch, 1846. Die Arachniden 13: 171.

Medium-sized jumping spider, 5.4–8 mm long with about 20 nominal species all endemic in the Oriental region. The diagnostic characters typical of *Thiania* are the broadly flattened cephalothorax, moderately wide clypeus; PME midway between ALE and PLE or slightly closer to PLE than to ALE; ocular area occupies approximately 0.38 length of carapace; length of AE row almost as long as PLE row; sternum in front as wide as base of labium and posterior end pointed between coxae IV; maxillae broad apically and narrowed basally; abdomen slender to ovoid; palpal organ thick, apophysis big and hooked laterally; seminal reservoir in the lateral surface of bulbus and upper part occupied by an ovoid strongly sclerotized plate becoming base of embolus, often with a conductor. Epigynum large, with two depressions divided by a median ridge. Copulatory openings slit-like. Internal canals frequently with accessory glands. Spermathecae ovoid or pear-shaped.

Thiania viscaensis new species

(Fig. 43a–i)

Description:
Female. Total length 7.36 mm. Cephalothorax 3.36 mm long, 2.44 mm wide, 1.12 mm high. Abdomen 4.00 mm long, 2.32 mm wide, 1.68 mm high. Cephalothorax dark reddish brown, black along PE, longer than broad, straight sided with dorsoventrally compressed cephalic area, thoracic area sloped on proximal one fourth. Fovea prominent medially as a deep groove posterior to carapace midlength. Ocular area finely punctate, occupies less than half of carapace length. Eye row length (mm) in decreasing order: AE = 2.10, PME = 1.96, PLE = 1.94, eye diameters (mm): AME = 0.64, ALE = 0.38, PLE = 0.20, PME = 0.08. AME separation one sixteenth eye diameter. AME–ALE separation twice AME separation, equal to one PME diameter. PME separation nearly three times AME diameter. PLE separation 7.6 times eye diameter. Clypeus height three times AME separation. Sternum brown, longer (1.32 mm) than broad (1.00 mm), margins bordered, distally concave and proximally reduced to a short pointed end. Labium almost as long, broadest basally and narrow on the yellow anterior edge with a slight cleft, median lateral half bulging, base procurved and just wider than apex of sternum, height ca. 0.75 of maxilla. Maxillae rounded apically each with scopula in the distal inner portion. Chelicerae vertically short, twice longer than broad with one retromarginal and two promarginal teeth. Legs I and II reddish brown except yellow femora of leg II, yellow-brown basal segments of tarsi, metatarsi and patellae, legs III and IV yellow with brown tinges on both of tibiae, anterior tip of femora and entire patellae. Leg I stoutest. Coxae yellow except blackish brown coxa I. Spination formulae: femur I = 5(0-1-1-2-1)-0-2-0, tibia I = 0-10(2-2-2-2-2)-1-1 and metatarsus I = 0-4(2-2)-0-2. Leg formula 1342.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.12	1.40	2.00	1.32	0.80	7.64
2	1.80	1.16	1.60	1.16	0.72	6.44
3	1.80	1.12	1.48	1.48	0.76	6.64
4	1.68	1.00	1.60	1.40	0.80	6.48
Pedipalp	0.88	0.55	0.41	–	0.88	2.72

Abdomen elongated, tapering posteriorly up to yellow spinnerets dorsally grayish with a broad white transverse band below the median half and a pair of slightly diverging elongated brown spots above the band, white band with a broad inverted V-shaped brown band medially. Anal area white. Entire abdomen clothed with short brown hairs, venter with two longitudinal lines below epigynum and extended up to a bulbous structure on the basal one fifth of abdomen. Spinnerets subequal in size and length. Epigynum orifice divided by a Y-shaped septum, anterior epigynal margin M-shaped in dorsal view.
Etymology: Derived from type locality, Visayas State College of Agriculture (VISCA).
Natural history: Vial-tapped from dew-laden wetland rice leaves with *Abelmoschus* growing on the levees in the early morning of July.
Material examined: PHILIPPINES. *Leyte Is.*, Baybay, Visayas State College of Agriculture, holotype female, 16 July 1985. A.T. Barrion.

Genus *Rhene* Thorell

Rhene Thorell, 1869. Nat. Act. Reg. Soc. Sci. Upasal 7(3): 37.

Small beetle-like jumping spiders clothed with conspicuous thick hairs. Body length usually less than 7 mm. Cephalothorax flattened, wider than long with CL : CW ratio of 0.73–0.98, narrowed and sloped posteriorly to accommodate anterior abdomen. PLE narrower than cephalothorax. Ocular quadrangle occupies at least 0.60 of carapace length. PME very small, set many times closer to ALE than to PLE. Sternum longer than wide, apex usually slightly concave and narrower than base of labium with a longitudinal median ridge. Leg I more robust and hirsute than legs II–IV.

Rhene hinlalakea new species

(Fig. 44a–h)

Description:
Male: Total length 6.85 mm. Cephalothorax 2.85 mm long, 2.90 mm wide, 2.00 mm high. Abdomen 4.00 mm long, 2.40 mm wide, 1.60 mm high. Cephalothorax orange-brown, ocular quadrangle darker, dorsally

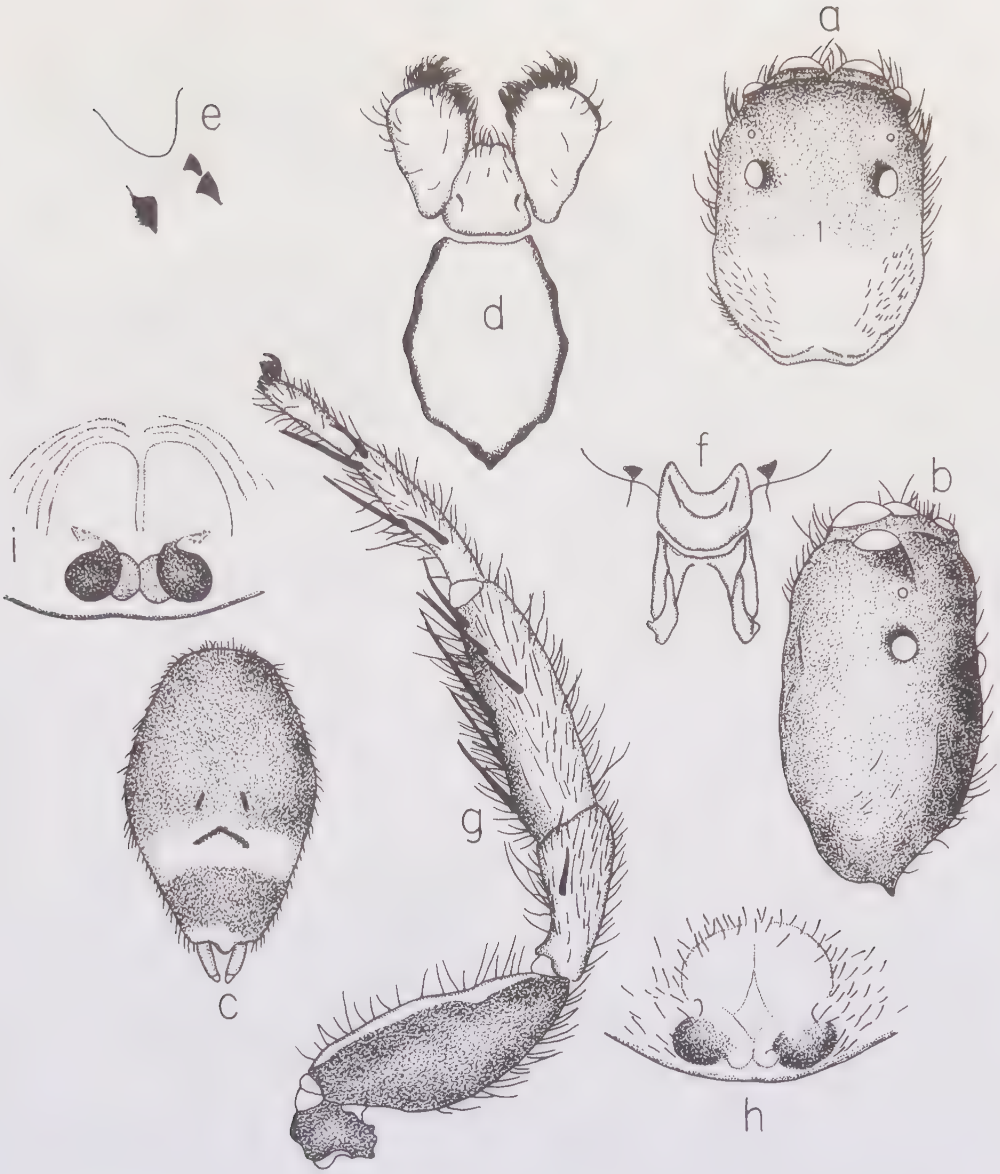

Fig. 43. Female *Thiania viscaensis* n. sp., dorsal (a) and lateral (b) views of carapace; abdomen (c); sternum, labium, and maxillae (d); cheliceral teeth (e); pedicel (f); leg I (g); and dorsal (h) and ventral (i) views of epigynum.

covered with white hairs, brown hairs laterally; eye margins black; dark brown small fovea. Carapace moderately flattened and slightly broader than long. CL/CW = 0.98. Eye diameter (mm): AME = 0.48, ALE = 0.21, PME = 0.08, PLE = 0.23. Eye separation (mm): AME–AME–ALE = 0.13, ALE–PME = 0.20, PME–ME = 1.73, PME–PLE = 1.16, PLE–PLE = 2.33. Length of eye rows (mm): AE = 1.70, PME = 1.88, PLE = 2.63. PME one sixth of AME diameter and set much closer to ALE than PLE. AE row occupies 0.58 mm of carapace width at broadest point. PLE distinctly posterior of the midlength of cephalothorax. Clypeus very narrow, 0.05 mm high, and covered with yellow-brown hairs. Sternum yellow, longer (1.18 mm) than wide (0.75 mm), broadest between coxae II, anterior half mostly smooth except median with minute hairs and about ten brown, long erect setae, anterior margin concave, and posterior tip truncate in front of coxae IV. Labium reddish brown with yellowish truncate apex, median elevated to form a longitudinal ridge, and posterior end widely notched for reception of apical sternum. Maxillae yellow apically and brownish yellow

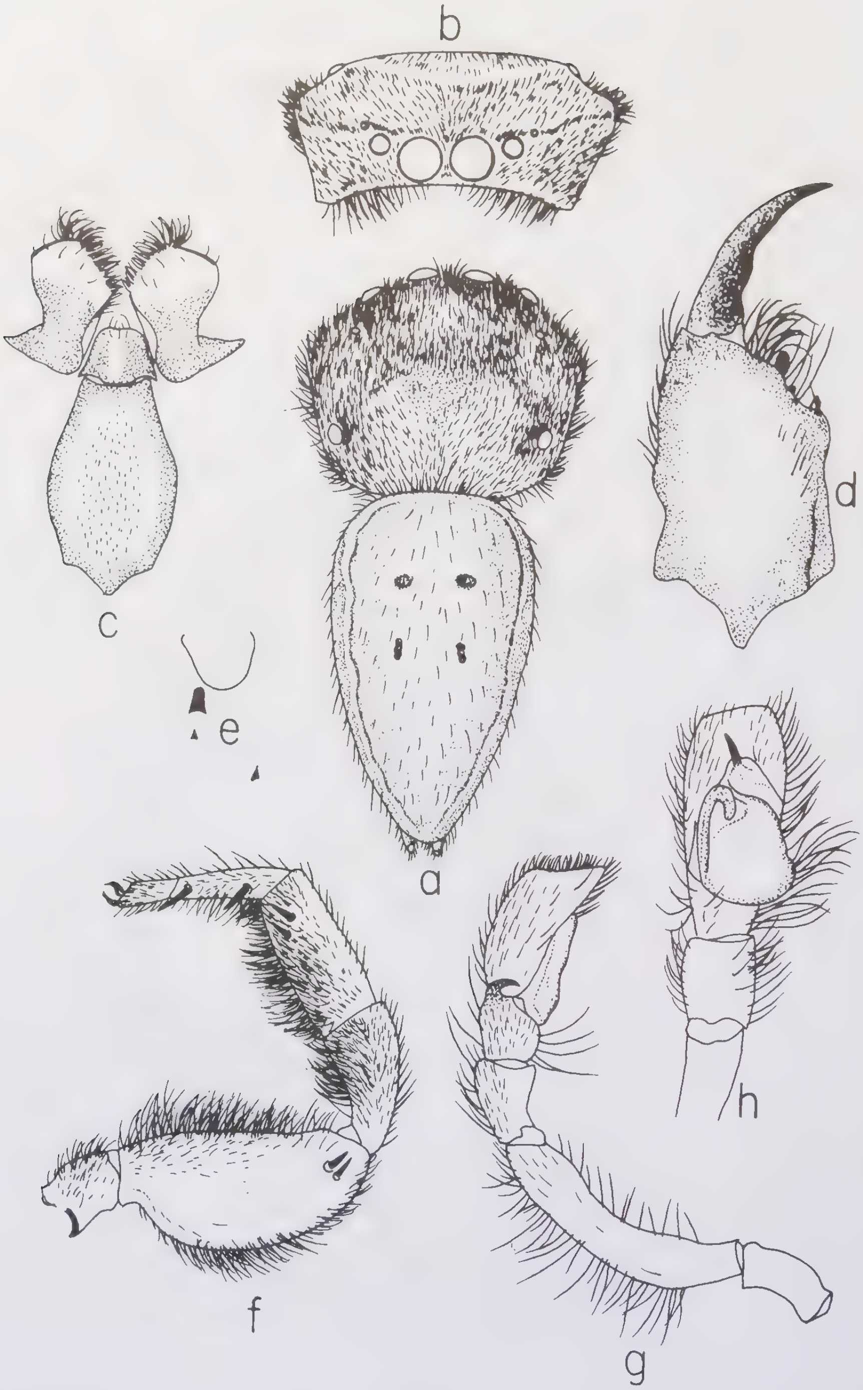

Fig. 44. Male *Rhene hinlalakea* n. sp. (a); frontal view of carapace (b); sternum, labium, and maxillae (c); chelicera (d); cheliceral teeth (e); leg I (f); entire pedipalp (g); and ventral view of pedipalp without femur (h).

towards the posterior, anterior part truncate to slightly rounded towards the outer edge and with yellow brown scopulae in the oblique apico-inner side, outer lateral margin indented medially and inner lateral margin completely grooved. Chelicerae brown, longer than wide, indented in the laterobasal one third, median ventral part with about ten transverse grooves similar to 'file'. Retromargin with a small tooth. Promargin with a small basal tooth posterior of the large rounded tooth following the scopulae. Fang enlarged basally with a minute tooth prior to apex. Legs yellow-brown except femora with gray tinge, moderately short but robust, particularly leg I, hairy and bear few spines. Coxa and trochanter yellowish to yellow-brown except in leg I. All femora swollen in the decreasing order: I > II > IV > III. Spination in femora I = II = 3/4-0-2-0, III = 3-0-3-2, IV = 3-0-1-1; tibia I = 0-0-2-0, II = III = 0-2-1-0, IV = 0-2-1-1. Prolateral femoral spines parallel to each other in a horizontal plane prior to apex, and prolateral tibial spines parallel to each other in an oblique position and located in the middle of the apical half of tibia I; metatarsi I with four (two pairs) of ventral spines and II with only three ventral spines. Tarsi two-clawed with dense tuft, each superior claw with at least ten teeth in leg I. Leg formula 1243. Pedipalp yellowish brown except apical segment with gray black hairs, total length more than length of femur I. Femur of pedipalp concave ventrally in lateral view, dorsally with sparsely erect hairs and a single spine close to apex. Patella with two thin subbasodorsal and subapicodorsal bristles. Tibia shorter than patella, lines with gray-black bristles in the laterals and almost bare in the venter similar to patella. RTA hook-shaped with sharply pointed tip. Cymbium longer than wide, apex obliquely truncate with a slender retrolateral subapical spine, tegular apophysis absent but tegular base extended to tibia, sperm duct inverted J-shaped on the left side of tegulum (in right palp) and with a small spur projected lateral to RTA; embolus short, projected anteriorly, and arises anterior of the tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.00	1.45	1.35	0.90	0.60	6.30
2	1.45	0.90	1.00	0.75	0.60	4.70
3	1.30	0.70	0.70	0.50	0.40	3.60
4	1.50	0.80	0.95	0.70	0.50	4.45
Pedipalp	1.10	0.35	0.25	–	0.70	2.40

Abdomen oblong, anteriorly wider than posterior, yellow with four pairs of brown spots dorsally (a large pair in anterior one third, and three pairs on top of each other at midlength), and white all along margins. Anterior margin with a moderately thick row of white hairs projected anteriorly to the cephalothorax. Venter yellow with two longitudinal rows of small spots between epigastric furrow and spinnerets. Anterior spinnerets born on a white circular base distinctly separated from each other, each segment parallel to each other and twice longer than broad and terminal segments projected toward each other. Posterior pair slender and diverging, slightly longer than the more robust anterior pair.

Etymology: Named after the thumb-like nature of the promarginal apical tooth ('hinlalake' means thumb in Tagalog).

Natural history: The holotype male was isolated from a D-Vac sample taken from drained and weedy lowland rice in July.

Material examined: PHILIPPINES: *Leyte Is.*, Leyte Prov., Ormoc, San Antonio Vill., holotype male, 16 July 1985, A.T. Barrion.

Distribution: Philippines.

Rhene habahumpa new species
(Fig. 45a–d)

Description:

Male: Total length 5.50 mm. Cephalothorax 2.20 mm long, 2.20 mm wide, 1.40 mm high. Abdomen 3.30 mm long, 1.60 mm wide, 1.63 mm high. Cephalothorax flat, reddish brown with white in the cephalic and brown hairs in the thoracic, eye margins black and pattern similar to *R. hinlalakea*. Eyes in three rows, PLE row > PME > AE. Eye diameter (mm): AME = 0.35; PLE = 0.21, ALE = 0.18, PME = 0.08. Eye separation (mm): AME–AME = 0.05, ALE–AME = 0.09; ALE–PME = 0.24; PME–PME = 1.32, PME–PLE = 0.70; PLE–PLE = 1.80. PLE at 0.70 of cephalothorax length, PME three times closer to ALE than to PLE. Clypeus height = 0.06 mm, approximately 0.17 times AME diameter. Sternum, labium, and chelicerae similar to *R. hinlalakea*. Labium with a median ridge. Chelicerae with a file ventrally, retromargin with a large tooth and two small promarginal teeth. Legs yellowish brown except hairy and stout leg I reddish brown, tibia I with one or two ventral spines and two pairs of ventral spines in metatarsus I. Leg formula 1423. Pedipalp simple, tibia concave, RTA small but sharply pointed and curved towards tegulum, embolus straight directed apically to tip of obliquely truncate cymbium.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.40	0.70	0.90	0.50	0.40	3.90
2	1.10	0.55	0.60	0.45	0.40	3.10
3	1.00	0.45	0.45	0.50	0.35	2.75
4	1.20	0.65	0.70	0.75	0.45	3.80
Pedipalp	0.80	0.25	0.25	–	0.60	1.90

Abdomen yellowish white, scutum-like dorsally with three pairs of brown oblong maculae of increasing length posteriorly, anterior end hirsute (with long hairs). Venter yellow with 12 pairs of brown spots in two longitudinal rows. Posterior spinnerets yellow, slender and diverging, anterior pair moderately close to each other.

Etymology: Named after the long hump in labium (long = 'haba' in Tagalog + hump).

Natural history: Collected from kerosene light trap samples in Claveria.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Patrocenio Vill., holotype male, 18 September 1989, E. Libetario.

Distribution: Philippines.

Genus *Harmochirus* Simon

Harmochirus Simon, 1885. Bull. Soc. Zool. Fr. 10: 440.

A small genus very similar to *Bianor*, found in most parts of the Oriental region, Japan, and Africa. Cephalothorax on the level of eye III (PLE) broader than in *Bianor* and eyes highly elevated. AME of males less bulging than in *Bianor*. Male abdomen with a more distinct scutum. Leg I much elongated, tibia much wider, and with long feathery setae (sometimes present in the femora). Leg spines longer than in *Bianor*.

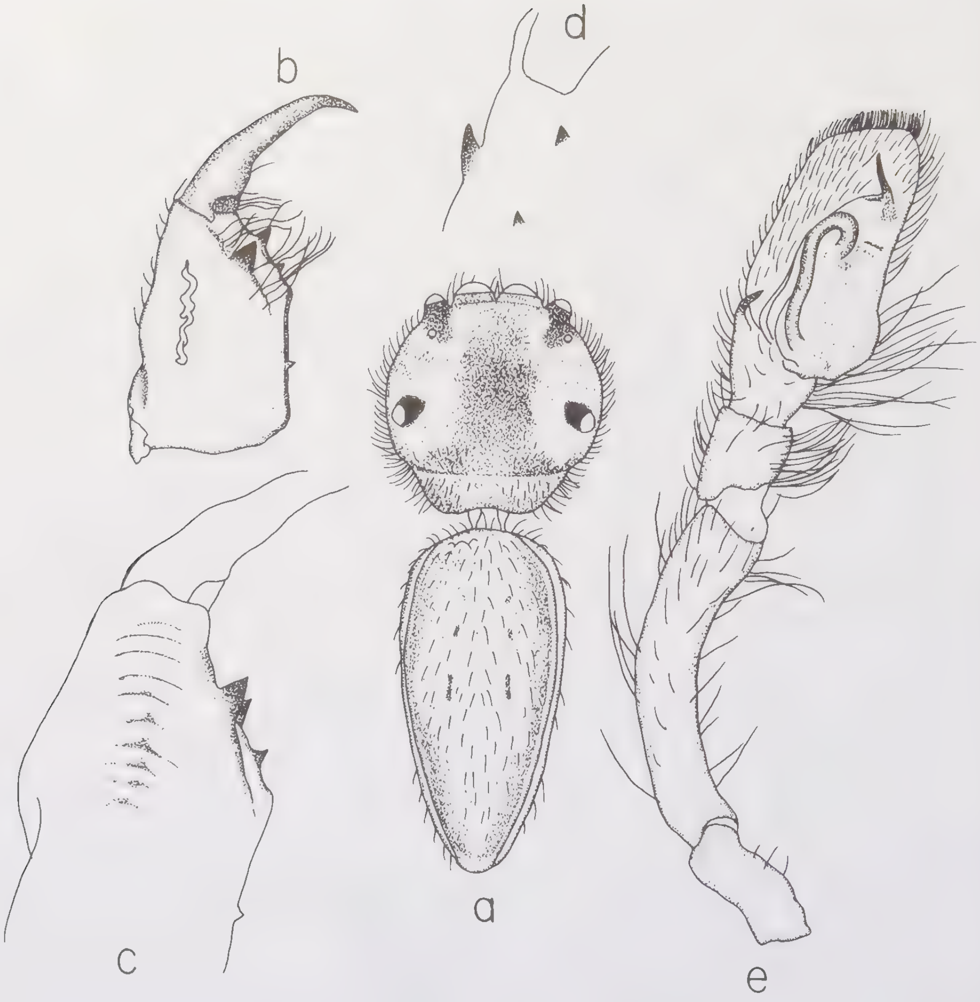

Fig. 45. Male *Rhene habahumpa* n. sp. (a); chelicera (b); file structure on chelicera (c); cheliceral teeth (d); and ventral view of pedipalp (e).

Harmochirus brachiatus (Thorell)
(Figs. 46a–g; 47a–j)

Ballus brachiatus Thorell, 1877. Ann. Mus. Stor. Nat. Genova 10: 626.
Harmochirus brachiatus Thorell, 1892. Ann. Mus. Stor. Nat. Genova 31: 250, 473.

Redescription:
Male: Total length 4.20 mm. Cephalothorax 2.20 mm long, 1.96 mm wide. Abdomen 2.00 mm long, 1.56 mm wide. Similar to female in outline. Cephalothorax longer and wider than the sloping abdomen with a deep and broad recurved notch posteromedially. Sternum nearly twice as long as broad, covered posteriorly with white hairs. Eye row length (mm): PLE = 1.52, AE = 1.26, PME = 1.1, PLE = 1.28. Eye diameter (mm): AME = 0.39, ALE = 0.20, PLE = 0.19, PME = 0.11. Maxillae triangular. Legs yellow except reddish brown basal third of all segments of leg I, with yellow-brown dorsad and ventrad, I with white spatulate hairs at venter of each patella, long coxae and trochanters, coxae nearly as long as sternum, each tibia with one long thin dorsal seta, six ventral spines and a row of spatulate hairs in between, metatarsi four ventrals each, apical pair below midlength of each tarsus. Coxae II to IV yellow. Leg formula 1432. Pedipalps black except yellow-brown cymbium, tibial apophysis acutely projected anteriorly, emboli short and uncoiled.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.60	1.08	1.40	1.36	0.88	6.32
2	1.00	0.52	0.80	0.68	0.56	3.56
3	1.16	0.54	0.76	0.76	0.52	3.74
4	1.12	0.52	0.88	0.88	0.52	3.92

Abdomen globular and small, black dorsally and white around lateral margins. Spinnerets gray to black, anterior twice as large as the posterior.

Variations: Males range 4.06–4.44 mm in length. AE = 1.22–1.28 mm, ALE = 0.18–0.20 mm, PLE separation = 1.29–1.44 mm. Mostly fully black with white spat-

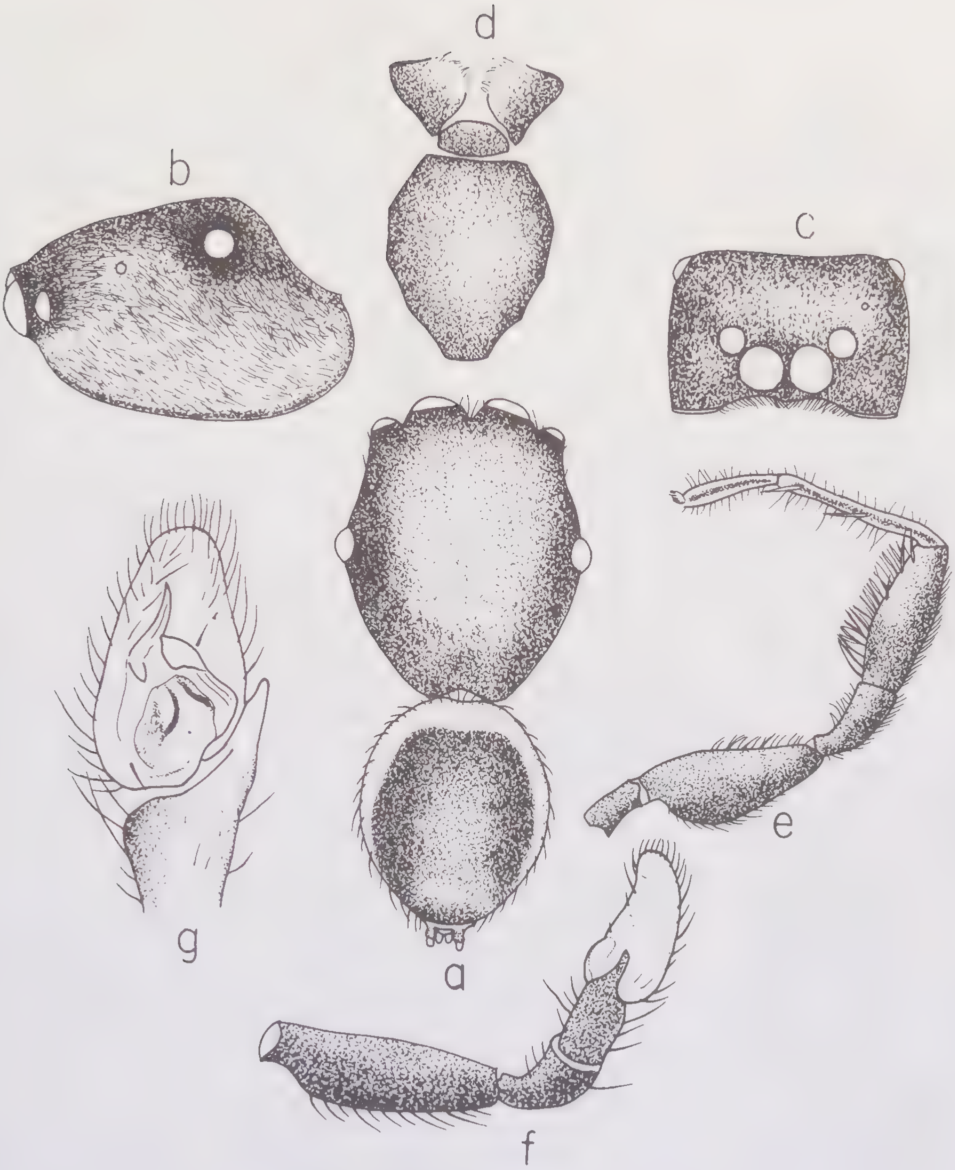

Fig. 46. Male *Harmochirus brachiatus* (Thorell) (a); side (b) and frontal (c) views of carapace; sternum, labium, and maxillae (d); leg I (e); lateral view of pedipalp (f); and ventral view of cymbium and part of tibia (g).

ulate hairs all over body, legs yellow except reddish brown leg I and femora II to IV, posterior spinnerets shorter than anterior and both prominent from above. *Female:* Total length 4.44 mm. Cephalothorax 1.80 mm long, 1.54 mm wide, 1.04 mm high. Abdomen 2.64 mm long, 2.08 mm wide, 1.76 mm high. Cephalothorax dark reddish brown, broadest along PLE, rough dorsum, straight sided, cephalic region broadly flat dorsally and sloped behind PLE. Ocular area occupies ca. two third of carapace length. Fovea absent. Lateral margins of carapace clothed with spatulate white hairs. Eye row length: PLE > AE > PME. Eye diameter (mm): AME = 0.35, ALE = 0.18, PLE = 0.16, PME = 0.06. AME the largest, five times PME, separation one seventh AME diameter, less than PME diameter. AME–ALE separation one third subequal to AME separation. PME separation three times ALE–PME separation, PLE separation seven times PLE diameter. Clypeus height one fourth AME diameter. Sternum brownish black, longer (0.62 mm) than wide (0.55 mm), mottled medially with yellow pits, anterior concave, posterior reduced to a truncated end, lateral edges straight opposite coxa I, long and slightly indented in coxa II, shallowly cleft in III, and unindented in IV. Labium dark reddish brown, wider than long, apex rounded, strongly recurved and yellow, base slightly procurved, height less than half of maxilla. Maxillae yellow brown with black serrulae and sparse hairs on scopulae, outer lateral margins prominently concave. Chelicerae same color as maxillae with two promarginal and one bifurcated retromarginal teeth. Legs yellow except reddish brown basal three segments of leg I, red to grayish brown femora, leg I with

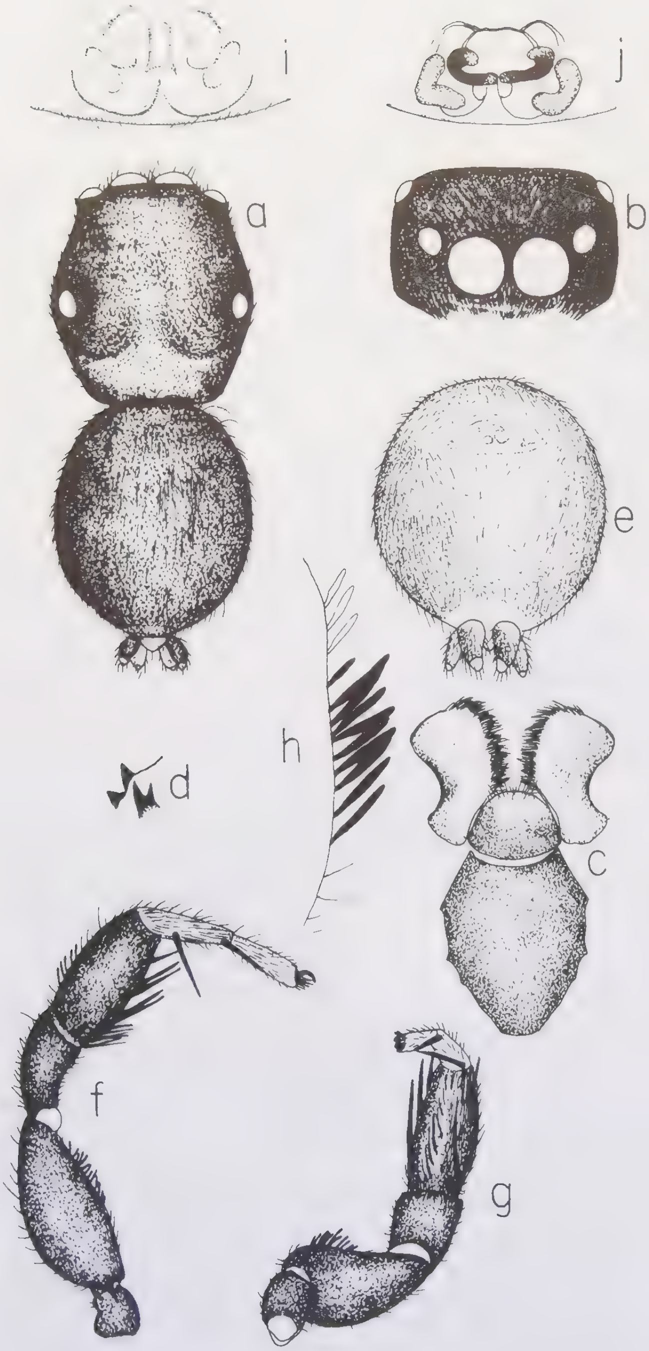

Fig. 47. Female *H. brachiatus* (Thorell) (a); frontal view of carapace (b); sternum, labium, and maxillae (c); cheliceral teeth (d); venter of abdomen (e); lateral (f) and ventral (g) views of leg I; feather-like bristles (h); and dorsal (i) and ventral (j) views of epigynum.

long coxae and trochanters ca. twice that in II, III, and IV, enlarged femora, patellae, and tibiae, spatulate hairs on the venter of femora and tibiae, tibia I with six lateroventral spines and a ventral fringe of spatulate hairs, each metatarsus with four long ventrals and the apical pair beyond midlength of tarsus. Tibia IV without spines except two long dorsal trichobothria, clothed with thin vertical hairs. Leg formula 4132.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.16	0.60	0.80	0.56	0.52	3.64
2	0.86	0.56	0.60	0.54	0.42	2.98
3	1.00	0.60	0.60	0.60	0.44	3.24
4	1.12	0.48	0.80	0.80	0.48	3.68

Abdomen grayish brown to black, globular, white spatulate hairs along the anterolateral margins, lateral margins with three or four longitudinal rows of white spatulate hairs, venter gray. Spinnerets visible above, grayish with white tips, subequal in length, anterior pair twice as broad as the posterior. Epigynum divided into two lobes posteriorly and by a cylindrical hood medially.
Natural history: *H. brachiatus* (Thorell) lives underneath low vegetation of grasses – *Echinochloa* and *Paspalum* or *Rottboelia* – and mimics ground floor coloration. The female preyed on young larvae of *Mythimna separata* (Walker) armyworm and on nymphs of five leafhopper genera – *Hecalus, Macrosteles, ?Empoascanara, Cicadulina,* and *Cofana* – and two planthopper genera – *Peregrinus* and *Sogatodes*. This spider can be found in August and September.
Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Bangag Vill., one female, 26 September 1981, B. Canapi; one male, Laguna Prov., Los Baños, Umali Subdivision, 19 September 1984, A.T. Barrion, one male, Los Baños, IRRI Upland Farm, 18 August 1982, A.T. Barrion.
Distribution: Philippines.

Genus *Hasarius* Simon

Attus Savigny and Audouin, 1825. Hist. Nat. 1(4): 169.
Hasarius Simon, 1871. Ann. Soc. Ent. Fr. 5(1): 329.
Tachyscarthmus Hogg. 1922. Proc. Zool. Soc. London 1922: 310.

Jumping spiders very similar to *Evarcha*. Combined length of patella and tibia of leg III as long as that of patella and tibia of leg IV. Posterior eyes equal in diameter to anterior lateral eyes. Retromargin of chelicerae a bifid tooth. Tibia of pedipalp often longer than the tarsus.

Hasarius adansoni (Audouin)

(Fig. 48a–l)

Attus adansoni Audouin in Savigny, 1825. Hist. Nat. 1(4): 169.

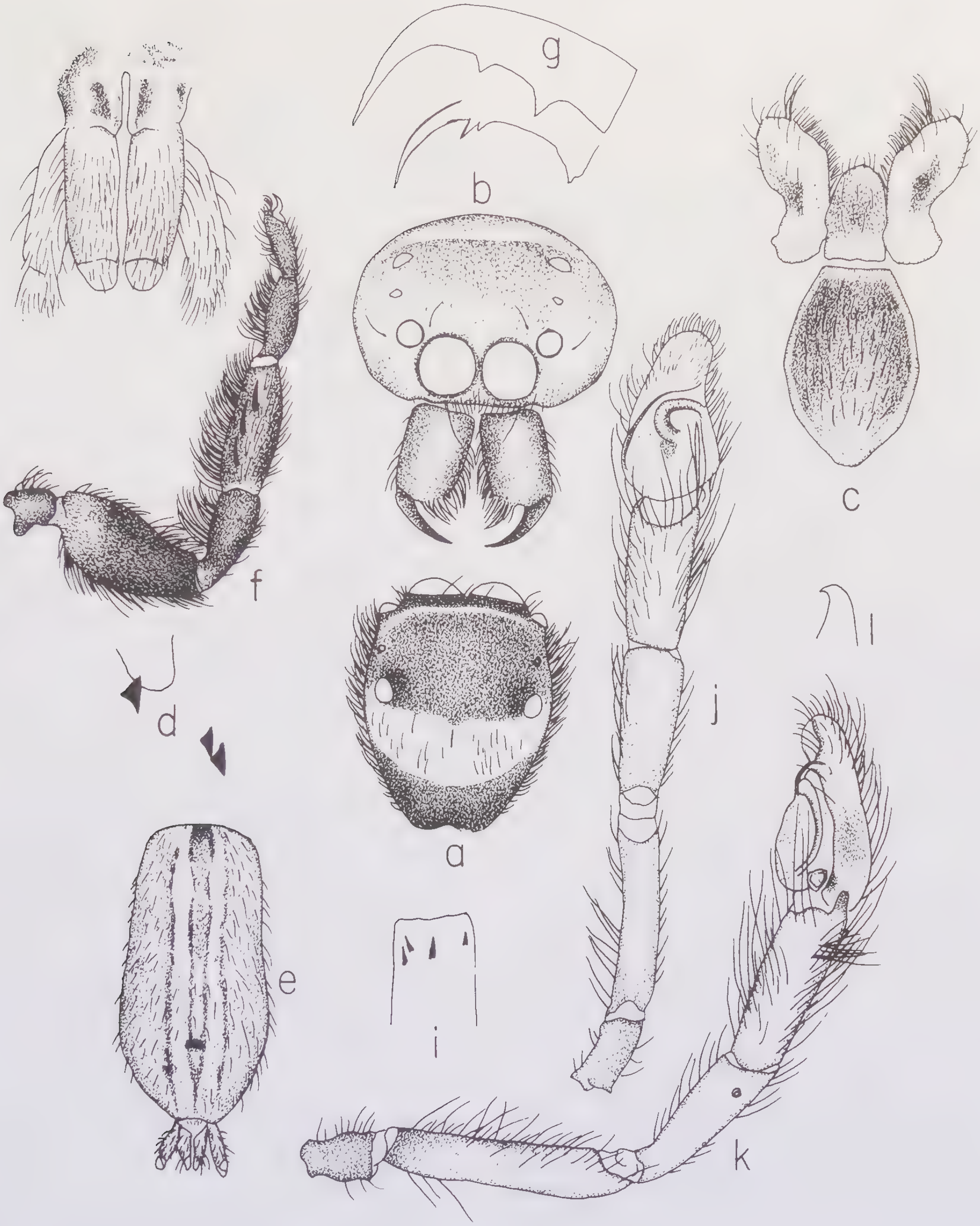

Fig. 48. Male *Hasarius adansoni* (Audouin), dorsal (a) and frontal (b) views of carapace; sternum, labium, and maxillae (c); cheliceral teeth (d); abdomen (e); leg I (f); tarsal claws (g); spinnerets (h); apex of femur I showing spines (i); ventral (j) and lateral (k) views of entire pedipalp; and tip of retrolateral tibial apophysis (l).

Hasarius adansoni Simon, 1871. Ann. Soc. Ent. Fr. 5(1): 330.
Tachyscarthmus annamensis Hogg, 1922. Proc. Zool. Soc. London 1922: 310.

Redescription:
Male: Total length 5.48 mm. Carapace 2.44 mm long, 1.72 mm wide, 0.88 mm high. Abdomen 3.04 mm long, 1.20 mm wide, 1.10 mm high. Cephalothorax reddish brown with blackish brown ocular quadrangle, eye margins and basal one fourth of carapace; brown fovea small, borne on a broad, transverse brown band behind PLE, white hairs in a longitudinal pattern behind each PLE, carapace margins and posterior part of AE with thick grayish brown hairs, cephalic region and anterior half of thoracic region flattened dorsoventrally, steeply sloped in the basal one fifth. Eye row length (mm): AE = 1.87, PLE = 1.85, PME = 1.76. Eye diameter (mm): AME = 0.60, ALE = 0.30, PLE = 0.23, PME = 0.12. Eye separation (mm): AME–AME = 0.23, AME–ALE = 0.19, ALE–PME = 0.43, PME–PLE = 0.41, PLE–PLE = 1.53. Ocular area occupies 0.42 of the length of cephalothorax, median ocular quadrangle much broader behind (1.44 mm) than in front (1.12 mm). Clypeus height about 0.63 AME diameter. Sternum dark brown, longer (0.88 mm) than wide (0.56 mm), narrowed but truncated distally, lateral margins straight except slight indentation opposite coxa IV, posterior end rounded. Labium dark brown, longer (0.52 mm) than wide (0.32 mm), broad basally and indented near basal one third, and apex rounded. Maxillae longer than wide, outer basolateral one third strongly indented and a ridge opposite each one in the inner margin adjacent to the labium, apical end diverging and shovel-like with a pointed tip, short and long scopulae in a diagonal portion of inner lateral margins. Chelicerae with a promarginal tooth and simple bicuspid retromarginal tooth. Legs yellow except reddish brown leg I and one half to three quarters of femora II to IV, spination formula in tibiae I = 0-7(2-3-2)-0-0, II = 0-4(1-1-2)-0-0, III and IV 0-2(0-0-2)-2-3. Dorsum of tibiae III and IV with a long, thin, erect hair in the apical one third. Leg I with ventral fringes, thickest on patella and tibia, partially developed in II, metatarsi and tarsi I to IV with three trichobothria (Tm) each, tarsus two-clawed with claw tuft, superior claws with variable number of teeth: I – 2, II – 3, and III and IV – 14. Leg formula 1432. Pedipalps brownish, tibial apophysis and ejaculatory duct, the patella and tarsus each longer than tibia, venter of each tibia and patella hairy, retrolateral tibial apophysis small and ventrally curved.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.10	1.05	1.90	1.40	0.90	7.35
2	1.60	1.00	1.30	1.00	0.75	5.65
3	1.90	0.95	1.10	1.10	0.70	5.75
4	1.80	0.90	1.30	1.40	0.75	6.15
Pedipalp	1.10	0.62	0.78	–	0.70	3.20

Abdomen light yellow-brown with a broad median black longitudinal band, sparsely clothed with moderately long brown hairs, cardiac area brown with yellow margins, longer than broad and broadest in the posterior one third, venter yellow with a grayish black median longitudinal band. Anterior spinnerets brown except yellow basal segment with a gray longitudinal band, parallel to each other, longer and stouter than the yellow posterior pairs.

Natural history: Vial-tapped from *Sphenoclea zeylanica* foliage in September and the other male from rice stem.

Material examined: PHILIPPINES: *Luzon Is.*, Nueva Ecija Prov., Zaragoza, Jaen Vill., one male 18 September 1978, A.T. Barrion; one male, 18 September 1978, C. de Castro.

Distribution: Pantropical species recorded in China, Vietnam and the Philippines (new record).

Gambaquezonia New Genus

Description:
Medium-sized spider 6 mm long. Cephalothorax longer than wide, moderately flat with two parallel longitudinal bands running from ALE to posterior end of thorax, margins black ventrally, eye area about 0.60 length of cephalothorax and its height at PLE as long as the distance from PLE to posterior end of thorax. Eye diameter: AME > ALE > PLE > PME. PME small, roughly 0.18 of AME and closer by one third to PLE than to ALE. Eye separation: PME–PME > PLE–PLE > ALE–PME > PME–PLE > ALE–AME > AME–AME. All measurements in *G. itimana*, type species. Chelicerae with two promarginal teeth and retromargin fissidentati type – single tooth with a serrate edge. Spination in venter of tibia I = 2-1-2-2-1-2-2; II = 2-2-1-2-1; venter of metatarsi I = 2-2-1-2-2-2-2, II = 2-2-2-2-2. Sternum truncate anteriorly subglobular towards the posterior with coxae IV close to each other. Leg formula 1432. Basal one third of tibia I with six to eight short trichobothria dorsally. Trichobothrium in metatarsus I (Tm I) = 0.59; tarsal claw of leg sickle-shaped with long slender base, each claw with at least ten teeth. Trochanter of palp with a black band similar to those on the legs. Abdomen 3.5 times longer than wide, with light gray to black bands and brown hairs on the bands. Epigynum with a pair of oval broad openings; copulatory canal membraneous and finely granulated, semicircular with moderately bulbous tip running to the globular, sclerotized spermathecae. Posterior epigynal margin indented medially.

Type species: *Gambaquezonia itimana* n. sp.

Diagnosis: The shape of the epigynum resembles *Euophrys* and *Lycidas*, but *Gambaquezonia* possess a structurally different epigynum and it belongs to the fissidentati group.

Etymology: Amalgam of ‘Gamba’ from ‘gagamba’ (spider) and type locality Quezon. *Gambaquezonia* is feminine.

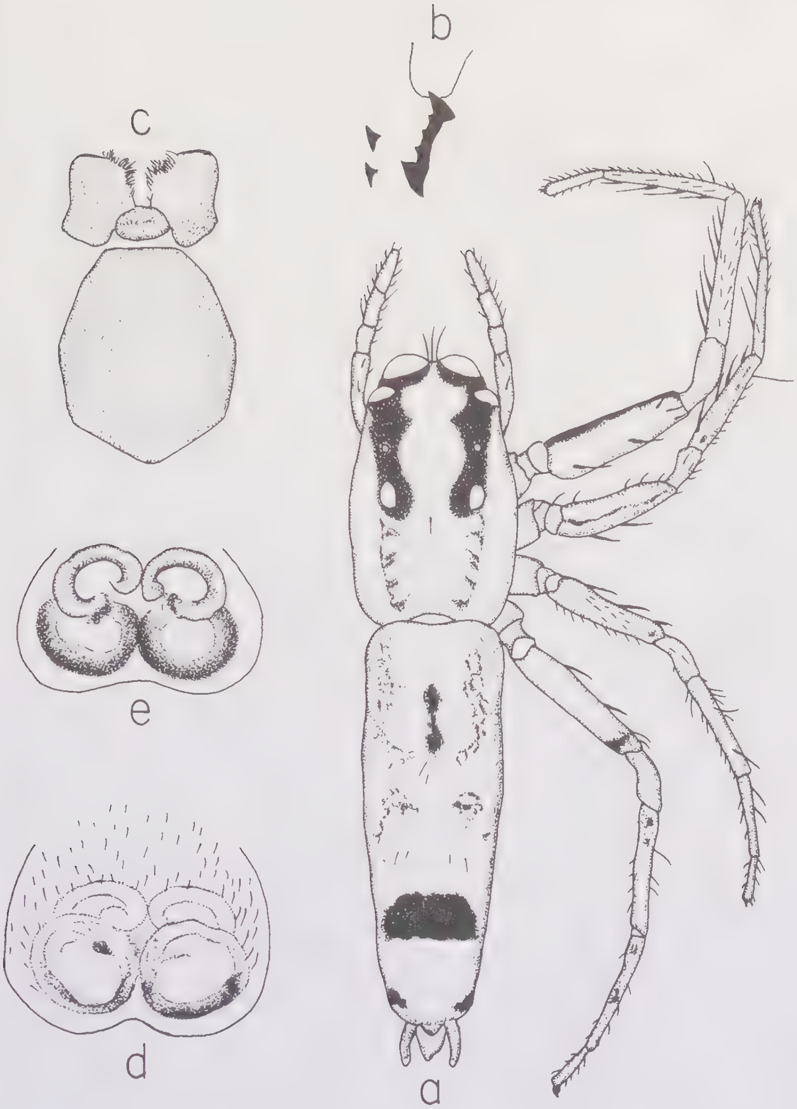

Fig. 49. Female *Gambaquezonia itimana* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Gambaquezonia itimana new species
(Fig. 49a–e)

Description:
Female: Total length 6.10 mm. Cephalothorax 2.40 mm long, 1.60 mm wide, 1.30 mm high. Abdomen 3.70 mm long, 1.50 mm wide, 0.80 mm high. Cephalothorax pale yellow with a pair of parallel longitudinal black bands running from ALE to posterior of thorax, band darker in the eye area than in the thorax, lateral margins of carapace with thin black stripe, becoming triangular in the sides of clypeus ventrolateral of AME. Cephalic slightly higher than the thoracic area. Fovea brown and very short. Eyes with black margins except brown AME. Eye diameter (mm): AME = 0.50, ALE = 0.33, PLE = 0.30, PME = 0.09. Eye separation (mm): AME–AME = 0.05, AME–ALE = 0.08, PME–PME = 0.81, PLE–PLE = 0.70, PME–PLE = 0.30, ALE–PME = 0.45. PME small, closer to PLE than to ALE. Sternum yellow, truncate apically, subglobular and widest coxae II, posterior end rounded between coxae IV. Labium brownish except pale yellow and truncate apex. Maxillae truncate anteriorly and tapered posteriorly. Chelicerae with a black spot frontodorsally, two promarginal teeth and fissidentate retromargin with a serrate tooth. Legs yellow with ventrolateral longitudinal gray to black bands from femora to metatarsi of legs I, III and IV, II without bands in the metatarsi. Femora with three dorsal spines. Tibia I with 3 thin and long dorsal setae and 12 (2-1-2-2-1-2-2) ventral spines, II with eight (2-2-1-2-1). Metatarsi I with 13 (2-2-1-2-2-2-2) and II with ten (2-2-2-2-2) ventral spines. Tm I = 0.59. Tarsi with a long median and a submedian trichobothria, with long base claw and each claw with at least ten teeth in leg I. Leg

formula 1432. Pedipalp yellow and a little shorter than femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	0.90	1.80	1.60	0.55	7.10
2	1.75	0.70	1.35	1.30	0.60	5.70
3	1.65	0.65	1.40	1.50	0.65	5.85
4	2.10	0.70	1.55	1.85	0.55	6.75
Pedipalp	0.75	0.33	0.30	–	0.83	2.21

Abdomen yellow with a W-shaped gray band apically, a pair of bent oblique black bands medially, a transverse broad black band posterior one third, and a pair of black bands posterolaterally, and anal tubercle black. Black bands clothed with brown hairs except the anal tubercle. Spinnerets visible dorsally, posterior pair uniformly yellow, slender and longer than the anterior pair with subcontiguous base and a black band in the inner apical half. Epigynum with a pair of broad oval openings, globular and well sclerotized spermathecae joined subapically by the inverted semicircular, membraneous, and finely granulated copulatory tract with a moderately bulbous tip. Posterior margin of epigynum sclerotized and indented medially.

Etymology: Named after the black patches of the species ('itiman' in Tagalog).

Natural history: Vial-tapped from a rice leaf in slash-and-burn upland rice in August. It was observed preying on white backed planthopper *Sogatella furcifera* (Horvath).

Material examined: **PHILIPPINES:** *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 26 August 1985, M. Perez.

Distribution: Philippines.

Genus *Chalcotropis* Simon

Chalcotropis Simon, 1902. Ann. Soc. Ent. Belg. 46: 377.

The genus *Chalcotropis* is a small group of jumping spiders endemic in the Oriental region and represented by ten nominal species. Members of the genus measure about 9 mm long, cephalothorax widest at about midlength, ocular quadrangle a little wider behind than in front, PME almost midway between PLE and ALE, PLE distinctly narrower than carapace, and abdomen oblong. Chelicerae of the males oblique and bear a longitudinal ridge usually terminating at a spur apically. Embolus short, pointed towards apex of cymbium. Retrolateral tibial apophysis (RTA) strongly developed. Leg I longer than IV, venter of tibia I and metatarsi I with many (nine and six in *C. luceroi* n. sp. respectively) spines. Femora I sometimes slightly shorter than tibia I.

Chalcotropis luceroi new species

(Figs 50a–e, 51a–e)

Description:

Male: Total length 8.70 mm. Cephalothorax 4.20 mm long, 3.15 mm wide, 3.30 mm high. Abdomen 4.50 mm long, 1.80 mm wide, 2.20 mm high. Cephalothorax wider than long, dark brown except black ocular quadrangle, brown rings of AME, and yellow thoracic median from short brown fovea to posterior end of thorax. Eye area with long sparse white hairs, thick and brush-like in the clypeus and basal part of chelicerae. Eye diameter (mm): AME = 0.85, PLE = 0.60, ALE = 0.55, PME = 0.10. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.13, PME–PME = 2.11, PLE–PLE = 1.88, ALE–PME = 0.53, PME–PLE = 0.33. AME more whitish than ALE. AE row = 2.63, PME row = 2.30 and PLE row = 2.55. Clypeus height very small, barely 0.18 times diameter of AME. Sternum yellow and clothed with fine light brown hairs, longer (1.58 mm) than wide (1.30 mm), slightly concave to widely truncate anteriorly and narrowly subtruncate posteriorly, lateral margins with moderate indentations. Labium reddish brown, slightly longer than wide, posterior end broader than the yellowish anterior end. Maxillae similar in color to the labium, narrowed posteriorly but very broad anteriorly almost forming an apicolateral tubercle, outer midhalf indented. Chelicerae strongly diverging, reddish brown with black oblique ridge dorsally (somewhat double-deck) terminating in a pointed tubercle prior to base of fang, promargin with a basal bifurcate tooth and retromargin with an apically blunt and a basal bifurcate tooth. Fang without distinct teeth and bend at midpoint. Legs yellow except reddish brown tinges in femora I, venter of leg segments darker than the dorsal areas, prolateral surface of coxa I reddish brown. Femur I slightly shorter than tibia I. Tibia I with nine (2-1-1-1-2-2) ventral spines and II with only six (2-1-1-2). Metatarsi I with six (2-2-2) ventral spines and II with only four (2-2). Leg formula 1342. Pedipalp yellow, left embolus short and slightly turned counterclockwise, sperm duct sinuate along outer margin of tegulum with third loop beside tip of RTA and posterior end of tegulum extended posteriorly. Cymbium longer than wide and hairy. RTA obliquely directed inwards and sclerotized with an acute tip. Ventrolateral side of tibia apically with a whitish yellow swelling. Tibia bent and concave.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.35	1.65	3.40	2.75	1.35	12.50
2	2.70	1.35	2.00	2.15	0.90	9.10
3	3.20	1.50	2.40	2.65	1.15	10.90
4	2.60	1.10	2.20	2.60	1.00	9.50
Pedipalp	1.60	0.80	0.95	–	1.10	4.45

Abdomen grayish with a broad median longitudinal yellow band with irregular edges in basal half, oblong,

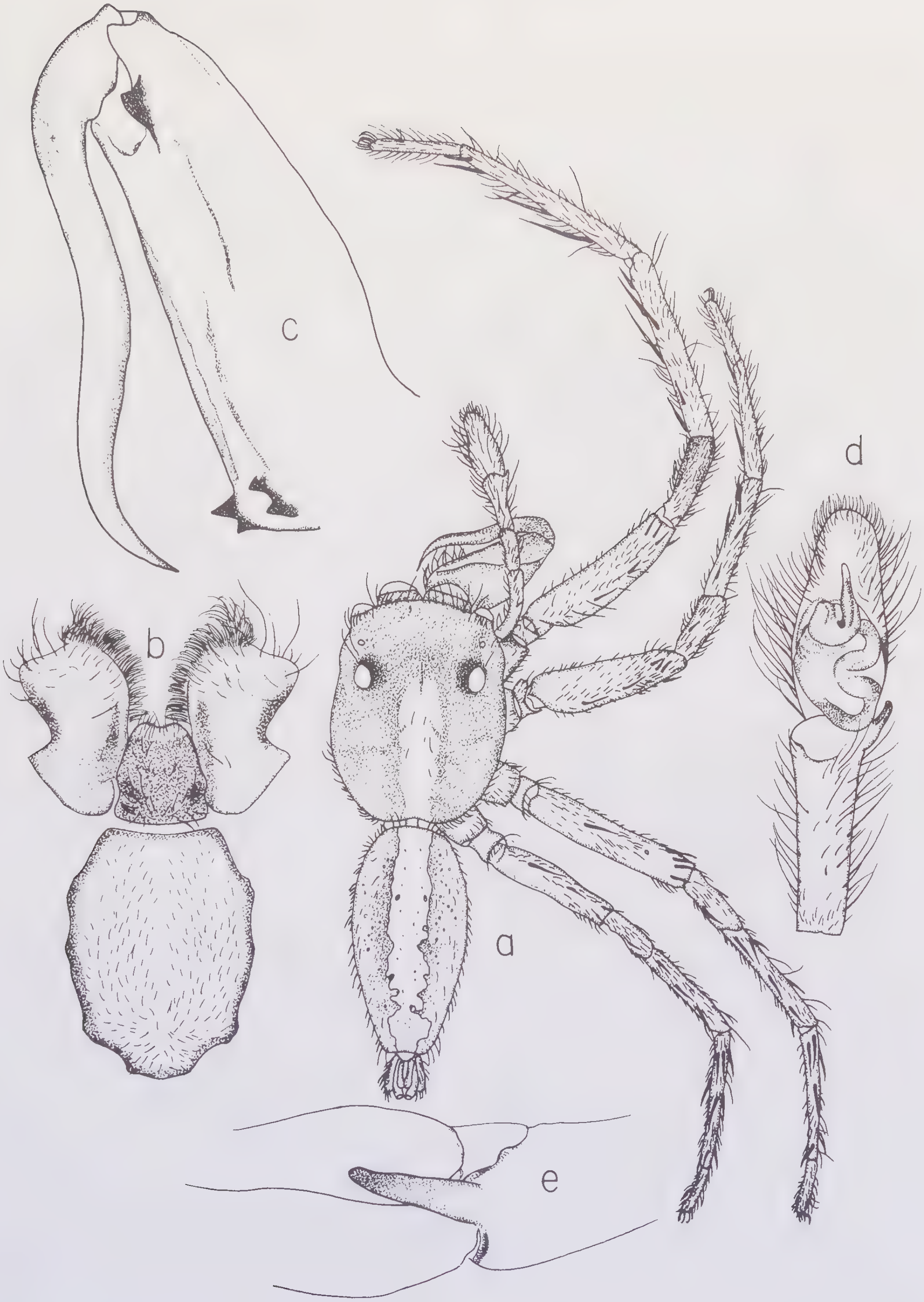

Fig. 50. Holotype male *Chalcotropis luceroi* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth and fang (c); ventral view of cymbium and tibia of pedipalp (d); and retrolateral tibial apophysis (e).

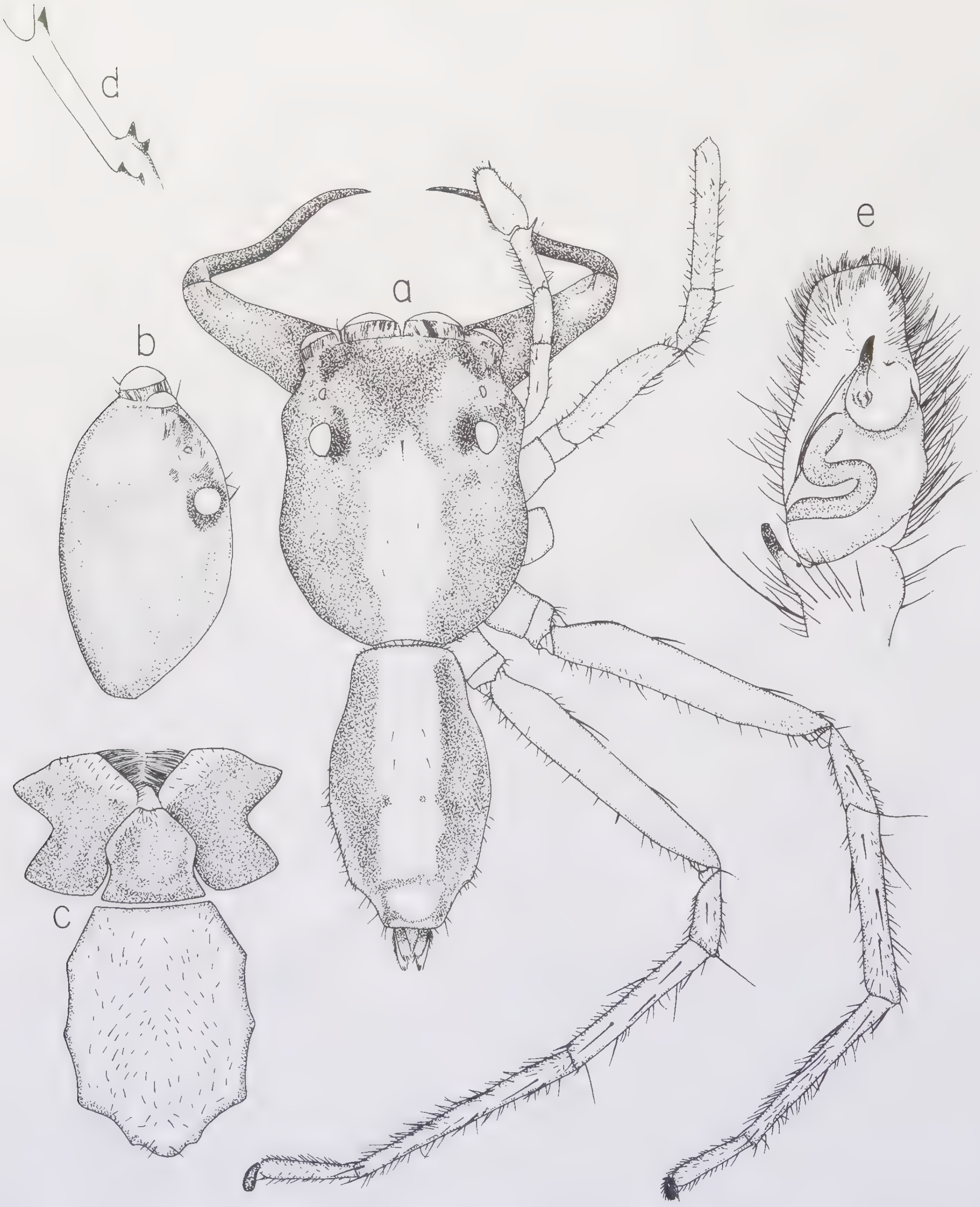

Fig. 51. Paratype male *C. luceroi* n. sp. (a); side view of carapace (b); sternum, labium, and maxillae (c); basal teeth of chelicera (d); and ventral view of cymbium and part of tibial apophysis (e).

venter with a light gray median longitudinal band terminating in a transverse pale yellow band posteriorly (anterior of spinnerets), yellow lateral margins, and epigastric furrow brown. Anterior pair of spinnerets robust, parallel and close to each other basally, posterior pair slender and slightly longer than the median pair.

Etymology: Named after my forest entomologist friend Mr Raymundo Lucero.

Natural history: The holotype male specimen was isolated from kerosene light trap samples set in cleared secondary dipterocarp forest in August.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon

Prov., Real, Llavac Vill., holotype male, 22 August 1985, R.F. Apostol: Laguna Prov., Los Baños, paratype male, 17 July 1990, M. Perez.
Distribution: Philippines.
Remarks: The paratype has no legs on the left side and right leg I incomplete, median of carapace with a broader longitudinal yellow band extended to abdomen, interrupted by a thin transverse band posteriorly. A yellow spot present anterior of the anal tubercle. Dorsum of chelicerae without a subapical spur.

Genus *Simaetha* Thorell

Simaetha Thorell, 1881. Ann. Mus. Civ. Stor. Nat. Genova 17: 520.

A small genus of medium-sized beetle-like spiders (body length less than 10 mm) represented by only five nominal species, all endemic in Australia, Sumatra, and New Guinea. *Simaetha* Thorell is closely related to *Simaethula* Simon, 1902. Members of the genus build small webs under bark or dried leaves, have moderately flat cephalothorax; PLE near midcarapace; subbasal retromargin of chelicerae constricted; retromargin with bifurcate basal tooth; leg I stout and hairy in venter of tibia; abdominal dorsum often marked by small paired spots and moderately large bands or spots. The Philippine species, however, bears no conical prominence in midsternum and PME closer to ALE than PLE.

Simaetha damongpalaya new species
(Fig. 52a–f)

Description:
Male: Total length 5.70 mm. Cephalothorax 2.60 mm long, 2.50 mm wide, 1.50 mm high. Abdomen 3.10 mm long, 2.20 mm wide, 2.00 mm high. Cephalothorax flat, lower than abdomen, a little longer than wide, dark reddish brown and bears nine small white spots in almost two rows – four posterior of AE row forming two L-shaped white bands, rest in line with PLE except the small posterior most white band. Eye margins black and ocular quadrangle with four white spots inside. Eye row length (mm): PLE = 2.33; PME = 1.63, AE = 1.57. Eye diameter (mm): AME = 0.45, PLE = 0.30, ALE = 0.25, PME = 0.08. Eye separation (mm): PLE–PLE = 1.7, PME = 1.5, PME–PLE = 0.7, PME–ALE = 0.23, AME–AME = AME–ALE = 0.10. Clypeus height narrow, approximately one third AME diameter. Sternum reddish brown, longer (1.05 mm) than wide (0.85 mm), truncated anteriorly and rounded posteriorly. Labium similar in color to the maxillae and sternum, longer than wide with an elevated area or hump in the middle. Maxillae squarish in apical half with dense scopulae anteriorly and inner half of anterolateral margins, posterolateral inner half excavated for the labium. Chelicerae robust, obliquely projected, outer apicolateral one third hump-like with minute teeth and rest of the posterior forms a ridge. Promargin with a small basal and a larger subbasal tooth. Retromarginal tooth long and has two cusps. Fang with a very minute tooth basad of the serrated edge. Legs yellow-brown, relatively long and slender, leg I distinctly more robust than the rest with enlarged segments except metatarsus and tarsus. Coxa I twice as long as coxa II. Femur I moderately flat and has hairs dorsally and ventrally. Patella with a band of white hairs dorsobasally and light brown hairs ventrally. Tibia I stout, thickly haired ventrally, and bears two pairs of ventral spines in the apical half. Metatarsus I with two pairs of ventral spines twice longer than those in tibia. Leg formula 1423. Pedipalp as long as combined length of femur + patella I, dark reddish brown. Femur strongly arched dorsally. RTA small and tapered. Cymbium whitish yellow except dark reddish brown basal half, base with a small cymbial structure almost touching tip of RTA. Embolus short and small, borne at apex of tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.70	1.10	1.20	1.00	0.65	5.65
2	1.25	0.65	1.00	0.80	0.40	4.10
3	1.20	0.55	0.70	0.75	0.35	3.55
4	1.50	0.75	1.00	0.85	0.40	4.50
Pedipalp	0.90	0.45	0.40	–	0.50	2.25

Abdomen ovoid to globular, brown with two broad white longitudinal anterior bands, two transverse white bands medially, and a longitudinal narrow band in the posterior one third extended to anal tubercle. Anterodorsal half of abdomen with three or four pairs of reddish brown spots. Anterior margin of abdomen with a thick set of grayish white short hairs. Venter of abdomen pale brown bordered laterally with a longitudinal row of yellow pits and anterior of epigastric furrow, a hat-like gray band marked by an inverted yellow V-shaped mark in the middle. Spinnerets dark gray to black in the stouter anterior pair, posterior pair more lightly colored with yellow inner areas.
Etymology: Named after the weed host found in the ricefield (in Tagalog = 'damo ng palay').
Natural history: D-Vac collected from *Celosia* weed occurring in a weedy ricefield in November.
Material examined: **PHILIPPINES:** *Luzon Is.*, Laguna Prov., Los Baños, Sipit area, holotype male, 12 November 1987, A.T. Barrion.
Distribution: Philippines.

Simaetha makinanga new species
(Fig. 53a–g)

Description:
Female: Total length 10.20 mm. Cephalothorax 4.00 mm long, 3.60 mm wide, 2.50 mm high. Abdomen 6.20 mm long, 3.70 mm wide, 3.20 mm high. Cephalothorax blackish brown with a silvery to lustrous green and

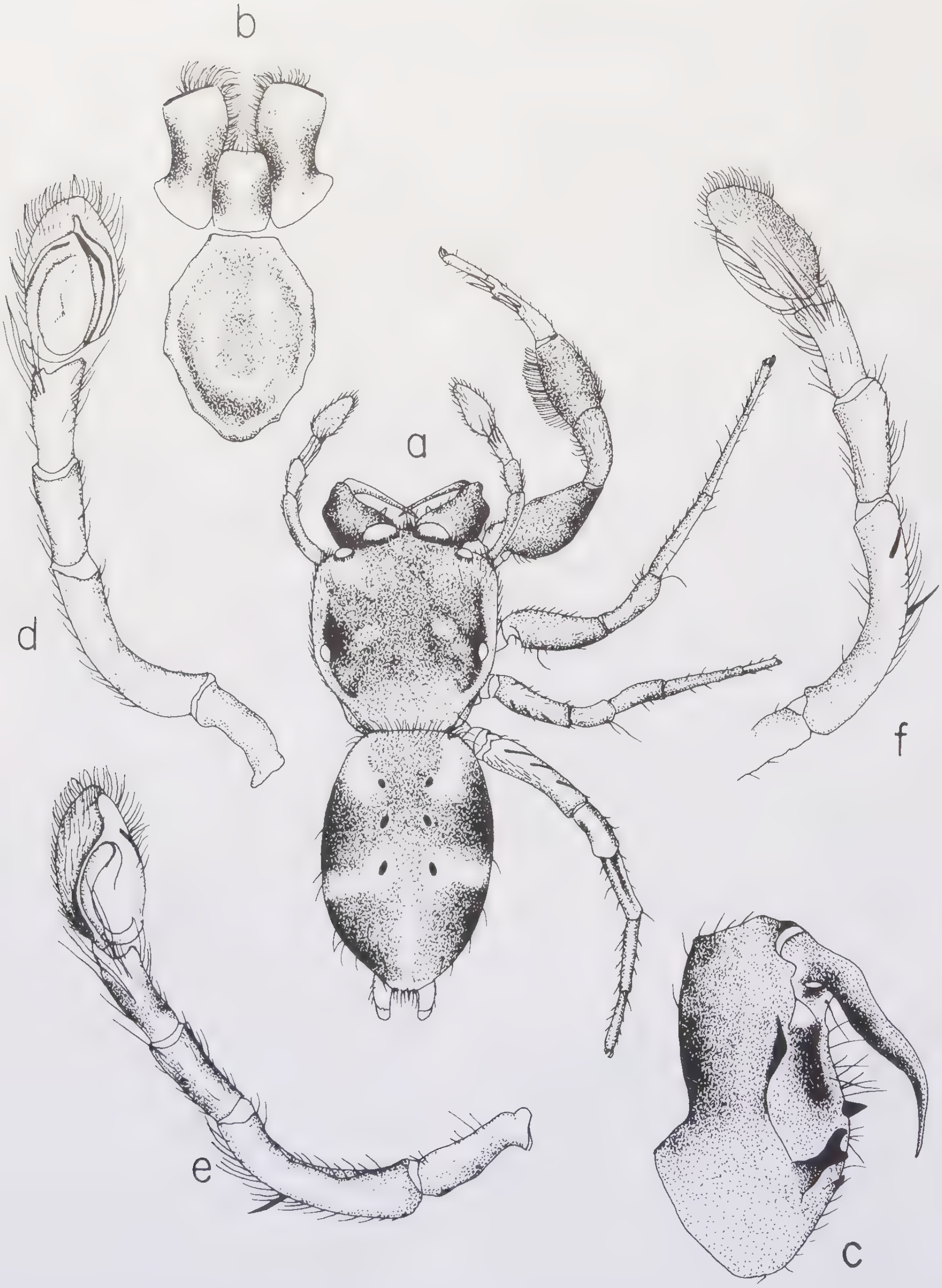

Fig. 52. Male *Simaetha damongpalaya* n. sp. (a); sternum, labium, and maxillae (b); chelicerae (c); and ventral (d), ventrolateral (e), and laterodorsal (f) views of pedipalp.

moderately wavy transverse band posterior of PLE and a large circular spot, each of similar color, surrounding the PME, dorsally flat in the cephalic area and moderately sloped posterior of the transverse band. CL/CW = 1.11. Eye diameter (mm): AME = 0.63, ALE = 0.34, PLE = 0.26, PME = 0.08. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.15, ALE–PME = 0.35, PME–PME = 2.23, PME–PLE = 0.95, PLE–PLE = 2.76. Length of eye row (mm): PLE = 3.06, PME = 2.35, AE = 2.29. PME small and separated from PLE by 2.7 times PME–ALE separation. Ocular quadrangle distinctly wider behind (3.06 mm) than in front (2.29 mm). Clypeus height narrow, about one seventh of ALE diameter. Sternum brown, marked with

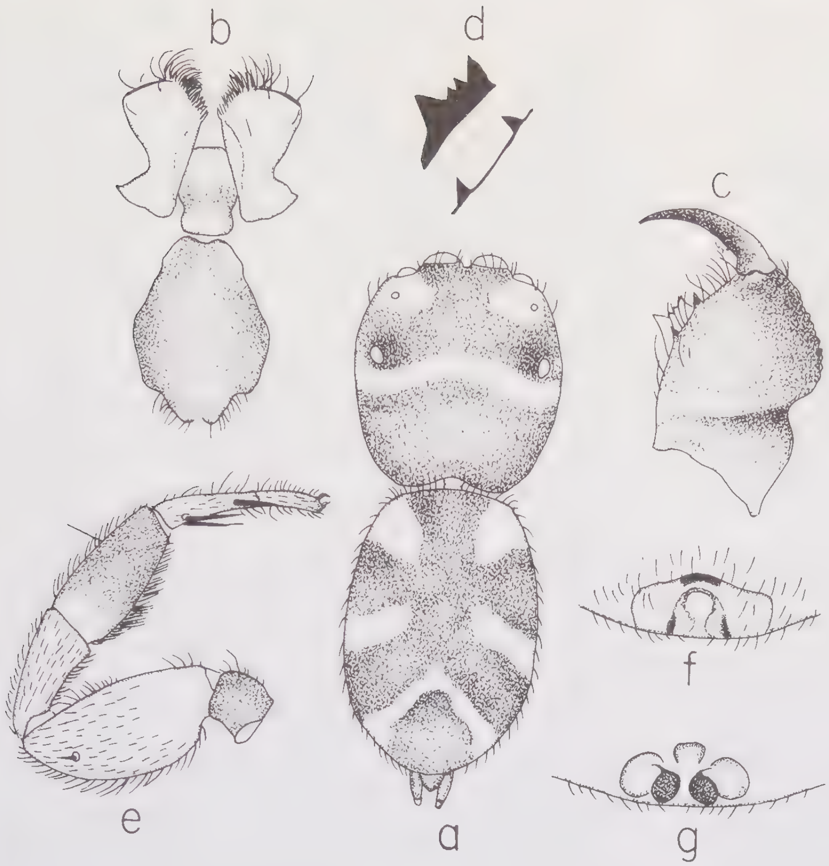

Fig. 53. Female *Simaetha makinanga* n. sp. (a); sternum, labium, and maxillae (b); chelicera (c); cheliceral teeth (d); leg I (e); and dorsal (f) and ventral (g) views of epigynum.

U-shaped silvery scales medially and sparsely erect hairs at its base towards the posterior end, apex of sternum narrowed and cleft in the middle, posterior end truncate and cleft medially before coxae IV, longer than wide and broadest between coxae II. Labium reddish brown, longer than wide (1.00 : 0.60 mm), apically truncate and slightly indented in posterior one third. Maxillae similar to labium in color, internal margin grooved, midlateral outer margin indented forming a broad apically truncate border. Chelicerae reddish brown, swollen and rough in the outer lateral midhalf forming a wide lateral groove towards the base, promargin with two widely separated teeth, and retromargin with a tetradentate tooth. Legs brown except red orange femur, patella, base of tibia in leg I and yellow tarsi II and IV. Femur I with two dorsal spines. Tibia I with four (two pairs) of ventral spines, basal pair in middle and apical pair. Metatarsi I with two pairs of ventral spines, with a band of white scale-like hairs posterolaterally, rest of segment with individually scattered scale-like hairs. Tarsi I bears retrolaterally white scale-like hairs, and each superior claw of leg I with a small tooth. Leg formula 4123. Pedipalp blackish brown, tibia and tarsus hairy, total length longer than femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.50	1.60	1.30	1.00	7.90
2	2.15	1.10	1.70	1.35	0.70	7.00
3	1.10	0.95	1.35	1.25	0.55	5.20
4	3.00	1.10	2.15	1.80	0.65	8.70
Pedipalp	1.10	0.35	0.50	–	0.75	2.70

Abdomen ovoid, longer than wide, dark brown to yellow-brown with silvery to lustrous green marks, two triangular spots anterodorsally, two oblique transverse bands in middle, and an inverted V-shaped band in the posterior half with its open part towards the spinnerets. Venter yellowish gray except whitish yellow base of spinnerets. Anal tubercle yellow. Anterior spinnerets brown, separated basally, and more robust than the slightly longer but slender posterior pair. Apical one third of basal segment yellowish white. Epigynum simple, median orifice along the anterior epigynal margin, spermatheca with two lobes, inner lobe about half the size of the outer lobe.

Etymology: Named after the lustrous color of the species ('makinang' in Tagalog).

Natural history: The holotype female was collected by D-Vac suction in a small upland dibbled ricefield in September.

Material examined: PHILIPPINES: *Luzon Is.*, Abra Prov., Bangued, Malicbong, holotype female, 20 September 1988, A.T. Barrion.

Distribution: Philippines.

Remarks: Morphologically similar to *Marpissa pulla* (Karsch) but *S. makinanga* has a tetradentate retromarginal tooth, interrupted median transverse band in the abdomen, lustrous silvery green spot in the PME, and double-lobed spermatheca spot in the PEM.

FAMILY CLUBIONIDAE WAGNER

(Two-clawed or Sac Spiders)

These are two-clawed hunting spiders commonly encountered on foliage or on the ground, where they make flat tubular retreats and nests in rolled-up leaves, or under stones, in litter, moss, or rubbish. The clubionids that habitually run on the soil exhibit far more diversity in size, appearance, and coloration that do the conservative plant forms. There is little difference between the sexes though the males are slightly smaller, often with the chelicerae longer and narrower and the legs somewhat longer.

Eight eyes homogeneous, or nearly so, arranged in two rows of four each. Cheliceral margins oblique and toothed. Endites more or less parallel, often widened at distal ends, with well delimited scopulae. Palp of female with claw. Legs spinose, tarsus with two terminal claws and usually furnished with bundles of complex terminal tenent hairs. Labium either longer than wide or wider than long; cheliceral furrow distinctly toothed on the lower margin; claw tufts usually well developed, claws similar and pectinate in a single row. Heart with three pairs of ostia. Tracheal system limited to the abdomen with spiracles close to spinnerets, contiguous poison glands short, hardly extending beyond chelicerae.

KEY TO THE CLUBIONID GENERA AND SPECIES

1 Total width of eye row, i.e. posterior eye row (PE), at least one half greatest width of carapace; dorsal brown scutum absent. 2

– Total width of eye row less than one half greatest width of carapace; dorsal brown scutum usually present. 41

2 Fovea very prominent; leg IV longer than I. 3

– Fovea absent or hardly visible; leg I longer than IV. 28

3 Tibia III with two ventral spines; if three then body with brown mottles. 4

– Tibia III with three ventral spines, body yellow. 26

4 Female. 5

– Male. 14

5 Retromargin with two teeth; second (T_2) promarginal teeth usually the largest. 6

– Retromargin with three or four teeth; third (T_3) or fourth (T_4) of promargin, the largest. 9

6 Abdomen with brown mottles. 7

– Abdomen uniformly yellow. 8

7 Chelicera bears three promarginal teeth and with a distinct yellow spherical spot dorsally, dorsad of the promarginal row; metatarsus and tarsus of legs I and II reddish brown; posterior one half of abdominal dorsum with blackish brown mottles (Fig. 54a); CL : CW = 1.56; epigynum with an anteriorly concave hood and a small orifice below it (Fig. 54d). . ... *Clubiona drassodes* O.P. Cambridge (Fig. 54a–d)

– Chelicera without yellow spot; legs with brown bands mostly on both ends of each segment and entire dorsum of abdomen with brown mottles (Fig. 55a); CL : CW 1.50; epigynum with a truncate transverse anterior hood, parallel-sided copulatory duct, globular spemathecae close to epigastric furrow (Fig. 55d). .... *Clubiona charleneae* n. sp. (Fig. 55a–e)

– Similar to *Clubiona charleneae* except for longitudinal and transverse abdominal markings (Fig. 57a); CL : CW = 1.29; epigynum with a vertical rectangular-like orifice on the epigastric furrow (Fig. 57b). ....
.... *Clubiona gallagheri* n. sp. (Fig. 57a–b)

8 Promargin with four or five teeth, subbasal tooth the largest; epigynum with a pair of parallel longitudinally ovoid orifices anterior to epigastric furrow and anterior spermathecae converge moderately on top of orifice (Fig. 58e–f); CL : CW = 1.39. *Clubiona japonicola* Boesenberg and Strand (Fig. 58a–f)

– Promargin with three teeth, midtooth the largest (Fig. 60b); dome-shaped epigynum bears a pair of C-shaped orifices with 'backs' opposite each other; slightly transverse ovoid spermathecae present anterior of the orifices (Fig. 60d) ....
.... *Clubiona pahilistapyasea* n. sp. (Fig. 60a–d)

9 Metatarsi I and II without ventral spines; metatarsus I : tarsus I more than 1.77. 10

– Metatarsus I and II with two ventral spines; metatarsus I : tarsus I less than 1.65. 11

10 Promargin bears four teeth, third tooth (T_3) the largest (Fig. 61c); metatarsus I : tarsus I = 1.77; epigynum with a long median longitudinal slit widened at both ends (Fig. 61d). ....
.... *Clubiona pototanensis* n. sp. (Fig. 61a–d)

– Promargin bears five teeth, T_4 the largest (Fig. 62b); metatarsus I : tarsus I = 2.04; epigynum with a pair of inverted droplet-like orifices dorsad of a median recurved opening (Fig. 62d), copulatory duct m-shaped (Fig. 62e). ....
.... *Clubiona kapataganensis* n. sp. (Fig. 62a–e)

11 Metatarsus I : tarsus I = 1.43; abdomen broadest in the posterior one half (Fig. 63a); epigynum with a pair of small spherical openings close to the epigastric furrow, globular spermathecae touch each other in the anteriormost part (Fig. 63d). .... *Clubiona topakea* n. sp. (Fig. 63a–d)

- Metatarsus I : tarsus I more than 1.43; abdomen ovoid or elongate. 12

12 Femur II longer than IV; abdomen elongate and truncate anteriorly (Fig. 64a); metatarsus I : tarsus I = 1.65; metatarsus IV longer than femora structure, extended beyond epigastric furrow, copulatory canals slightly parallel to each other forming a right angle between each arm of two spermathecae (Fig. 64ef). .... *Clubiona hugisva* n. sp. (Fig. 64a–f)

- Femora II shorter than IV; abdomen ovoid to slightly oblongate; metatarsus I : tarsus I = 1.59; metatarsus IV either longer or shorter than femora IV; epigynum structurally different. 13

13 Basal two thirds of pedipalp brown (Fig. 65a); metatarsus I : tarsus I = 1.59; metatarsus IV shorter than femora IV; spination in femora I and II = 3-0-1-0; anterior pair of spermathecae ovoid, inner parts fused, and parallel to each other (Fig. 65de). .... *Clubiona victoriaensis* n. sp. (Fig. 65a–e)

- Pedipalps yellow (Fig. 66a); metatarsus I : tarsus I = 1.52; metatarsus IV longer than femora IV; spination in femora I and II = 3-0-2-0; anterior pair of spermathecae converging toward each other (Fig. 66de). .... *Clubiona dikita* n. sp. (Fig. 66a–e)

14 Tibia I with more than ten ventral spines. 15

- Tibia I with only four or five, normally two pairs, ventral spines. 16

15 Tibia I with ten pairs of relatively thin spines; metatarsus I : tarsus I = 2.20; CL : CW = 1.75; fourth promarginal tooth the largest (Fig. 67b); outer lateral margins of maxillae slightly constricted (Fig. 67c); base of tegulum bears tuft and retrolateral tibia apophysis very short, blunt, and callus-like (Fig. 67d). .... *Clubiona unanoa* n. sp. (Fig. 67a–d)

- Tibia I with six pairs of slender spines (Fig. 68a); metatarsus I : tarsus I = 1.71; CL : CW = 1.36; fifth promarginal tooth the largest (Fig. 68b); outer lateral margins of maxillae deeply constricted (Fig. 68c); tegulum without hair tuft; tibial apophysis horn-like, hooked outwards in lateral view, apophysis bears transverse file-like structures (Fig. 68def). .... *Clubiona krisisensis* n. sp. (Fig. 68a–f)

16 Metatarsus II with or without ventral humps, long spines present; chelicera with minute teeth in between promargin and retromargin. 17

- Metatarsus II not as above; chelicerae without in-between teeth. 18

17 Abdominal dorsum with a broad yellow brown median band (Fig. 69a); apical promarginal tooth pointed and retromargin with three teeth (Fig. 69b); tibial apophysis hooked towards the inside, apex truncate (Fig. 69e). .... *Clubiona katioryza* n. sp. (Fig. 69a–e)

- Abdominal dorsum uniformly yellow with paired long brown hairs forming two longitudinal rows in the apicomedian one third (Fig. 70a); apical promarginal tooth pointed, larger than the basal one; retromargin has three, basal two teeth closer to each other and relatively far from the apical tooth; single tooth present between the promargins (Fig. 70b); tibial apophysis distinct and strongly rounded apically (Fig. 70d). .... *Clubiona paranghinlalakirta* n. sp. (Fig. 70a–d)

18 Tibia I with five ventral spines. 19

- Tibia I with four ventral spines. 22

19 Retromargin with five teeth; CL : CW = 1.25–1.28. 20

- Retromargin with less than five teeth; CL : CW = 1.39–1.40. 21

20 Eye diameter: ALE > AME = PME > PLE; CL : CW = 1.25; femur IV slightly longer than II, metatarsus I longer than metatarsus II, metatarsus I : tarsus I = 2.84; abdomen yellow with a broad median longitudinal brownish yellow band with nine pairs of setae arranged in two longitudinal rows (Fig. 71a). .... *Clubiona venusae* n. sp. (Fig. 71a–e)

- Eye diameter: AME > PME = AME > ALE; CL : CW 1.28; femur IV distinctly longer than II, metatarsus I shorter than II; metatarsus I : tarsus I = 2.06; abdomen with scutum-like band (Fig. 72a). .. .. *Clubiona maysangarta* n. sp. (Fig. 72a–f)

21 Apical margin of sternum truncate; CL : CW = 1.40; median ocular quadrangle 0.3 times wider behind than in front (Fig. 73a); eye diameter: ALE > PME > PLE > AME; metatarsus I : tarsus I = 2.12; retrolateral tibial apophysis slightly hooked outwards; base of cymbium moderately protruded (Fig. 73e). .. *Clubiona hugispaa* n. sp. (Fig. 73a–f)

- Apical margin of sternum double-concave, separated by the elevated median area; CL : CW = 1.39; median ocular quadrangle 0.7 times wider behind than in front; eye diameter: ALE > AME > PME = PLE; metatarsus I : tarsus I = 1.93; retrolateral tibial apophysis (RTA) flat and thumb-like with a basal cavity, J-shaped striae; cymbium subglobular to ovoid (Fig. 74d). .... *Clubiona leonilae* n. sp. (Fig. 74a–d)

22 Small yellow clubionids, less than 3.50 mm long; eye diameter: ALE > PME > PLE >AME; CL : CW = 1.33; abdomen 1.28 times longer than carapace (Fig. 75a); chelicera bears four retromarginal and five promarginal teeth, fourth promarginal the largest (Fig. 75b); tibial apophysis thumb-like with an additional small process pointed inwards (Fig. 75d). .... *Clubiona zandstrai* n. sp. (Fig. 75a–d)

– Medium-sized mottled brown clubionid, 6.75 mm long (Fig. 56a); eye diameter: ALE > PME > AME = PLE; Cl : CW = 1.34; chelicera with three promarginal, second tooth the largest, and retromarginal with two widely separated teeth (Fig. 56b); tibial apophysis short and subtriangular, inwardly hooked. .. *Clubiona charleneae* n. sp. (Fig. 56a–d)

– Medium-sized yellow-bodied spiders, more than 5 mm long. 23

23 Retrolateral tibial apophysis (RTA) flat laterally, broad basally with serrated edge; abdomen with scutum-like dorsal plate; retromargin with two teeth; promargin with four teeth, apical one large and nipple-like with a minute tooth at its base, subbasal tooth also large but pointed (Fig. 76b). 24

– RTA, abdomen, and cheliceral dentation not as above. 25

24 Body barely 6.05 mm long, CL : CW = 1.34 (Fig. 76a); bases of subapical pair of long prolateral setae in tibia of pedipalp in oblique position (Fig. 76e); metatarsus I : tarsus I = 2.25; spination in femur III similar to IV = 3-0-2-2; eye diameter: ALE > PME > AME = PLE. .... *Clubiona parangunikarta* n. sp. (Fig. 76a–g)

– Body 6.45 mm long, CL : CW = 1.48 (Fig. 77a); bases of subapical pair of long prolateral setae in tibia of pedipalp on the same transverse line (Fig. 77d); metatarsus I : tarsus I = 1.72; spination in femur III (3-0-2-2) different from IV (3-0-1-1); eye diameter: ALE > AME = PME = PLE. .... *Clubiona unikarta* n. sp. (Fig. 77a–g)

25 Abdomen parallel-sided, five times longer than wide, dorsolaterals with light gray longitudinal striae (Fig. 78a); promargin bears two teeth, apical larger than basal; retromargin with three teeth (Fig. 78b); tibial apophysis bears a laterally projected retrolateral apophysis with apex truncate; embolus along margins of cymbium (Fig. 78d). .... *Clubiona manipisea* n. sp. (Fig. 78a–d)

– Abdomen broadest at midhalf, 2.3 times longer than broad and without striae (Fig. 59a); promargin bears three teeth, retromargin has two or three (Fig. 59b); tibial apophysis with a large dorsal and a small ventral apophysis; embolus projected towards apex of cymbium (Fig. 59de). .... *Clubiona japonicola* Boesenberg and Strand (Fig. 59a–e)

26 Tibia IV longer than II; metatarsi II strongly curved or concave basally (Fig. 79a), bear no ventral spines; metatarsus I : tarsus I = 2.00; chelicera with five retromarginal teeth and four promarginal, third (T_3) tooth the largest (Fig. 79b); retrolateral tibial apophysis curved in and out towards apex, ventral apophysis apically truncate. .... *Clubionoides kawitpaaia* n. sp. (Fig. 79a–e)

– Tibia IV shorter than II; metatarsus II slightly concave or normal; metatarsus I : tarsus I ranges from 1.45 to 2.12. 27

27 Metatarsi I and II with two ventral spines each; metatarsus I : tarsus I = 1.45; CL : CW = 1.12, and abdomen moderately parallel-sided anteriorly but broadest at midhalf (Fig. 80a); promargin with five teeth, fourth tooth the largest (Fig. 80b). .... *Clubionoides bukaea* n. sp. (Fig. 80a–e)

– Metatarsi I and II without ventral spines; metatarsus I : tarsus I = 2.12; CL : CW = 1.38; abdomen, third tooth the largest (Fig. 81b); retrolateral tibial apophysis moderately long, angulate subbasally like a pointing finger. .... *Clubionoides turongdaliriana* n. sp. (Fig. 81a–d)

28 Trochanter IV with one unpaired ventral spine at proximal end; abdomen long, slender, and parallel-sided, AbL : AbW = 4.22–5.06, anal tubercle strongly triangular to prominently long (Figs. 82a, 83a); promargin with three and two teeth in the female and male, respectively; retromarginal teeth reverse of promargin in both sexes (Figs. 82b, 83b); sternum apically truncate; epigynum with a pair of oblong orifices near genital groove and spermathecae in the anteriormost (Fig. 82d); retrolateral tibial apophysis short and toe-like with a small process near it and cymbium without basal spur (Fig. 83def). .... *Kakaibanoides paranga* n. gen. and sp. (Figs. 82a–e; 83a–g)

– Trochanter IV with one unpaired ventral spine at distal end; abdomen usually ovoid; anal tubercle not prominently long; promargin with two or three teeth, retromargin with one to five teeth; epigynum with small spermathecae well separated and situated near genital groove; cymbium with a strong basal spur. 29

29 Male. 30

– Female. 35

30 Promargin with two teeth; CL : CW = 1.29; metatarsus I : tarsus I = 5.10–5.60. 31

– Promargin with three teeth; CL : CW = 1.32–1.60; metatarsus I : tarsus I = 2.16–3.88. 32

31 Cephalic margins parallel-sided; eye diameter: AME > ALE = PME = PLE (Fig. 84a); apical tooth of retromargin strongly developed (Fig. 84b); chelicera porrect, without a subapicolateroventral spur (Fig. 84cd); basal spur of cymbium sickle-shaped, apex of retrolateral tibial apophysis bifurcate (Fig. 84fhi); terminal segment of posterior spinnerets long and slender (Fig. 84j). .... *Cheiracanthium daquilium* n. sp. (Fig. 84a–j)

– Cephalic margins not parallel-sided; eye diameter: AME = ALE > PME = PLE (Fig. 85a); apical tooth of retromargin small; chelicera with a subapicolateroventral spur; basal spur of cymbium straight end, apex of retrolateral tibial apophysis slightly pointed and curved inwards (Fig. 85bc); terminal segment of posterior spinnerets unusually long (Fig. 85d). .... *Cheiracanthium liplikeum* n. sp. (Fig. 85a–d)

32 Ventrolateral apical one fifth of chelicera with a spur (Fig. 87b); apices of dorsal and ventral apophysis rounded in ventral view, spur of cymbium blade-like (Fig. 87efg); abdomen broadest at midhalf in dorsal view but concave in lateral view (Fig. 87h). .... *Cheiracanthium payateus* n. sp. (Fig. 87a–h)

– Chelicera without ventrolateral apical spur. 33

33 Eye diameter ALE = PLE > AME > PME (Fig. 88a); CL : CW = 1.33; retromargin with three teeth, second promarginal tooth the largest (Fig. 88b); metatarsus I : tarsus I = 2.48; femora and metatarsi length: I > IV > II > III; and tibia I > II > IV > III; basal spur of cymbium straight and blade-like, base of embolus emanates from right side of tegulum moving clockwise (Fig. 88ef). .... *Cheiracanthium itakeus* n. sp. (Fig. 88a–g)

– Eye diameter not as above; retromargin with two teeth, apical one the largest; metatarsus I : tarsus I = 2.45–3.88. 34

34 Cymbium in lateral view with a deep cavity before apex (Fig. 89a); tegular apophysis slender, thin, and bent before curved apex; tip of retrolateral apophysis blunt and indented subapically; conductor thumb-like with two indentions underneath (Fig. 89c); subbasal tooth of retromargin small and very close to the large apical tooth (Fig. 89d). .... *Cheiracanthium ligawsolanum* n. sp. (Fig. 89a–e)

– Cymbium without a deep groove in lateral view (Fig. 91a); tegular apophysis moderately broad, squarely cut underneath before apex (Fig. 91c); RTA medially curved, tip pointed and curved outwards (Fig. 91d), ventral apophysis hooked inwards and space in between two apophyses deeply concave or obliquely truncate; subbasal retromarginal distinctly isolated from apical tooth (Fig. 91f). .... *Cheiracanthium tigbauanensis* n. sp. (Fig. 91a–f)

35 Abdomen with longitudinal striae; CL : CW = 1.16, tibia I > II > IV > III (Fig. 93a); ventral spines in tibia I to IV: 2-1-0-0, metatarsus I to IV: 3-4-4-5; epigynum with a sclerotized scape-like median plate (Fig. 93de). .... *Cheiracanthium tingilium* n. sp. (Fig. 93a–e)

– Abdomen without longitudinal striae, CL : CW ranges from 1.22 to 1.5. 36

36 Retromargin with a single tooth; CL : CW = 1.32; abdomen strongly ovoid and tibia I to IV without ventral spines (Fig. 94a); metatarsus I : tarsus I = 2.96; epigynum with the anterior spermathecae converging posteriorly (Fig. 94e). ..... *Cheiracanthium bikakapenalcolium* n. sp. (Fig. 94a–e)

– Retromargin with three teeth. 36

37 CL : CW = 1.5; eye diameter: ALE = PME = PLE (Fig. 90a); clypeus height 0.5 AME diameter; metatarsus I : tarsus I = 2.18; tibia I–IV without ventral spines; epigynum with spermathecae on the lateral ends of a moderately transverse elongate orifice (Fig. 90e). .... *Cheiracanthium ligawsolanum* n. sp. (Fig. 90a–f)

– CL : CW ranges only from 1.22 to 1.39; eye diameter different. 38

38 Tibia I, metatarsus I and II each with three ventral spines; metatarsus III and IV without ventral spines; metatarsus I : II = 2.59; CL : CW = 1.22; eye diameter: AME = ALE > PLE > PME; abdomen ovoid (Fig. 95a): second promarginal tooth the largest (Fig. 95b); epigynum with a V-shaped median mark between spinnerets (Fig. 95e). .... *Cheiracanthium hugiscium* n. sp. (Fig. 95a–e)

– Tibia I with one or two ventral spines; metatarsus I : tarsus I = 2.32–4.04; CL : CW = 1.29–1.39. . 39

39 Tibia I with two ventral spines and one each of prolateral and retrolateral spines in tibia III and IV; metatarsal spination I = 0-3-0-0, II = 0-4-1-0; III = 0-3-5-4, IV = 0-6-3-3: metatarsus I : tarsus I = 2.51; CL : CW = 1.31, eye diameter: AME > PME = ALE (Fig. 92a); epigynum without median sclerotization between spermathecae (Fig. 92cd). .... *Cheiracanthium tigbauanensis* n. sp. (Fig. 92a–d)

– Tibia with one ventral spine, no prolateral spine in tibia III. 40

40 AME = ALE > PLE > PME (Fig. 96a); CL : CW = 1.39; apical segment of posterior spinnerets short and kidney-shaped in posteroventral view; metatarsus I : tarsus I = 2.32, metatarsus III with four ventral spines and IV with seven; epigynum with a transverse hat-like plate in between spermathecae (Fig. 96d). .... *Cheiracanthium catindigae* n. sp. (Fig. 96a–e)

– ALE > AME = PLE > ME; CL : CW = 1.29; apical segment of posterior spinnerets long and slender (Fig. 86a); metatarsus I : tarsus I = 4.04; metatarsi III and IV with three and five ventral spines, respectively; epigynum with a double lip-like mark in between spermathecae (Fig. 86d). .... *Cheiracanthium liplikeum* n. sp. (Fig. 85a–e)

41 Tibia and metatarsus of legs I and II without ventral spines; carapace margins serrated and entire body reddish brown (Fig. 97a); AE slightly recurved, PE almost straight; RTA develop porrect and sharply pointed; promargins without tooth (Fig. 97b); apex of maxillae tapered (Fig. 97c); embolus short (Fig. 97d). .... *Alaeho linoi* n. sp. (Fig. 97a–d)

– Tibia and metatarsi of legs I and II with three or more paired ventral spines. 42

42 Posterior eye row procurved in dorsal view; trochanter IV with a distal notch ventally; metatarsus I with two or three pairs of ventral spines. 43

– Posterior eye row straight or recurved; trochanter without notch; metatarsi I with more than three pairs. 44

43 Tibia I and II each with six (three pairs) of ventral spines, metatarsi I and II with two pairs each; anterior end of cephalothorax rounded, uniformly reddish brown AE recurved and PE straight to procurved (Fig. 98a); abdomen broadest in posterior one third; RTA poorly developed, short embolus curved and directed upwards (Fig. 98ef); legs brown with reddish brown femora. ....
.... *Castianeira tiranglupa* n. sp. (Fig. 98a–f)

– Tibia I with 16 (eight pairs) of ventral spines, II has six pairs and metatarsi I and II have four (two pairs) and six (three pairs) of ventral spines, respectively; cephalothorax chocolate-brown with broad leaf-like or umbrella-like band dorsally, legs yellow except brown apical one half of femora I–IV (Fig. 99a). .
.... *Agroeca kltina* n. sp. (Fig. 99a–b)

44 Tibia I with 13 (six pairs + one) ventral spines, II has seven (three pairs + one), metatarsus I with 12 (six pairs) and II with five (two pairs + one); cephalothorax with shallow pits and anterior end moderately pointed, AE more procurved than the PE row (Figs. 100a, 101a); chelicera broadest at midlength and constricted subbasolaterally (Fig. 100d); epigynum with a pair of subrectangular to ovoid spermathecae, anterior end with a deep cavity in dorsal view (Fig. 100g), ventrally spermathecae converge; apex of tibia with five processes and retrolateral apophysis trifurcate in male's palp (Fig. 101e). .... *Phrurolithus ulopatulisus* n. sp. (Figs 100a–i, 101a–e)

– Tibia I with 15 (seven pairs + one) ventral spines, II has ten (five pairs) similar to metatarsus I and II with nine (four pairs + one); cephalothorax red with black to gray mottles or shades and abdomen with reddish brown scutum occupying more than one half of abdominal length (Fig. 102a); epigynum with a heart-like unsclerotized area, small spermathecae close to the epigastric furrow (Fig. 102b). ....
.... *Scotinella tinikitkita* n. sp. (Fig. 102a–b)

Genus *Clubiona* Latreille

Clubiona Latreille, 1804. Nouv. Hist. Nat. 24: 134.
Elaven Cambridge, 1898. Biol. Centrali Amer. Araneidea 1: 238.

Small or medium-sized spiders, usually white, cream, pale gray, or tawny, usually darker brown at the cephalic and on chelicerae; carapace wide in front, especially in females, thoracic groove present; posterior eye row wider than anterior, with eyes either equidistant, or medians farther from each other than from laterals; chelicerae stout and often geniculate in females, in males generally more slender, longer, and tapering, and sometimes with sharp ridges, or keels, along anteromedial face, lateral face, or both; number of teeth on the margins of cheliceral fang furrow variable even in the same species, usually five on promargin, with occasionally six and sometimes four, or even only three, usual number on retromargin three or four, with occasionally five or two, males tend to have fewer than females, tarsal claws long and claw tufts very conspicuous; fourth legs longer than first, legs I and II with tarsi and metatarsi conspicuously scopulate, as well as having usually two pairs of ventral spines beneath the tibiae and one pair beneath metatarsi, all tarsi armed with pair of long claws, abdomen truncated at base, tapering behind, clothed with pale yellow, short pubescence, with silky reflection; most are without markings, although a few have abdomen marked with a series of chevrons.

Clubiona is a large genus with approximately 320 described species scattered in all the geographical regions of the world.

Clubiona drassodes O.P. Cambridge
(Fig. 54a–d)

Clubiona drassodes O.P. Cambridge, 1874. Proc. Zool. Soc. London 1874: 414.
C. atwali Gurdip Singh, 1970. Sci. Cult. Calcutta 36(7): 410–412.

Redescription:
Female: Total length 9.80 mm. Cephalothorax 3.70 mm long, 2.60 mm wide, 2.20 mm high. Abdomen 6.10 mm long, 3.30 mm wide, 3.10 mm high. Cephalothorax yellowish brown in the cephalic and yellow in the thoracic area. Eyes in two rows, straight AE row shorter than the procurved PE row. Eye diameter (mm): AME = 0.23, ALE = 0.19, PME = 0.18, PLE = 0.15. Eye separation (mm): AE equally spaced at 0.10, ALE–PLE = 0.13, PLE–PME = 0.30, PME–PME = 0.40. Clypeus height small, 0.22 times AME diameter. Sternum yellow except brown areas opposite each coxa, longer than wide and almost uniformly covered with white hairs, anterior end almost truncate, and posterior tip blunt. Labium longer (0.83 mm) than wide (0.50 mm) similar to maxillae, reddish brown with yellow apices. Maxillae deeply constricted at midhalf in the outer margin. Chelicerae moderately porrect, promargin with three teeth, middle tooth the largest and closer to apical tooth; retromargin with two teeth. Legs relatively long and slender, yellow with yellowish metatarsi and tarsi I and II bearing ventral scopulae. Spination in femur I = II = 3-0-1-0, III = 3-0-2-1, IV = 3-0-1-1, tibia I = 0-4(2-2-0)-0-0, II = 0-3(1-2-0)-0-0, III = 0-2(0-1-1)-2-2; IV = 0-3(1-1-0)-2-2; metatarsi I = II have two (2-0-0) ventral spines each, III

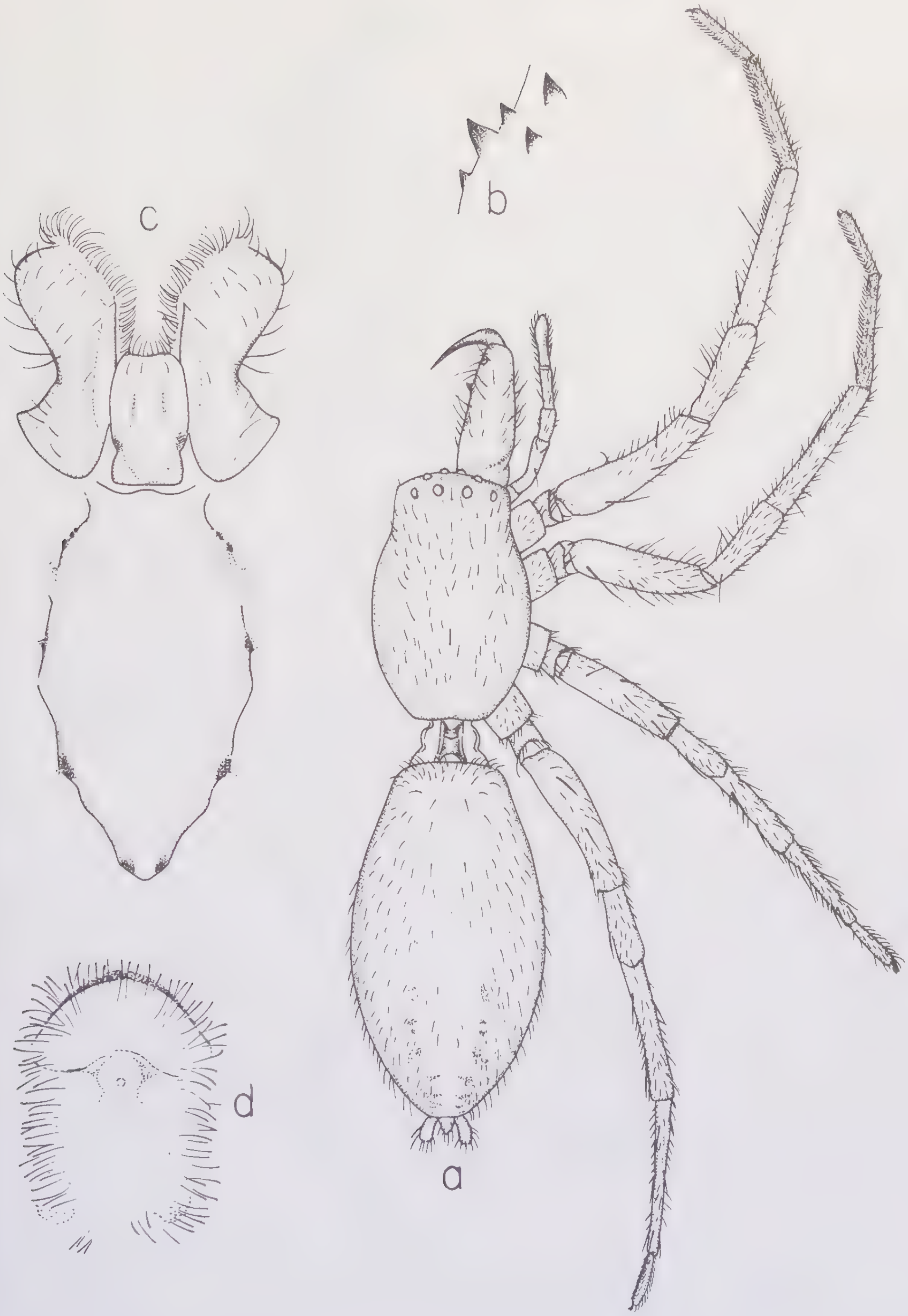

Fig. 54. Female *Clubiona drassodes* O.P. Cambridge (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and epigynum (d).

with four (2-0-2), IV with four (2-1-1). Leg formula 4213. Pedipalp yellow with brownish red tarsus, hirsute, with spines and a tarsal claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.30	1.35	2.40	1.60	1.00	8.65
2	2.40	1.40	2.40	1.70	0.90	8.80
3	2.00	1.00	1.60	1.50	0.70	6.80
4	2.70	1.20	2.50	3.00	0.75	10.15
Pedipalp	1.20	0.55	0.80	–	0.90	3.45

Abdomen ovoid, yellow with minute brown hairs, and brown bands or spots in the posterior one half. Venter uniformly yellow. Spinnerets typical of *Clubiona*. Epigynum simple, cap-like structure present in the anterior, and spermathecae close to the epigastric furrow.

Natural history: Collected from rice in April.

Material examined: INDIA: Madurai, one female, 2 April 1990, M.S. Venugopal.

Distribution: India, Burma, and China.

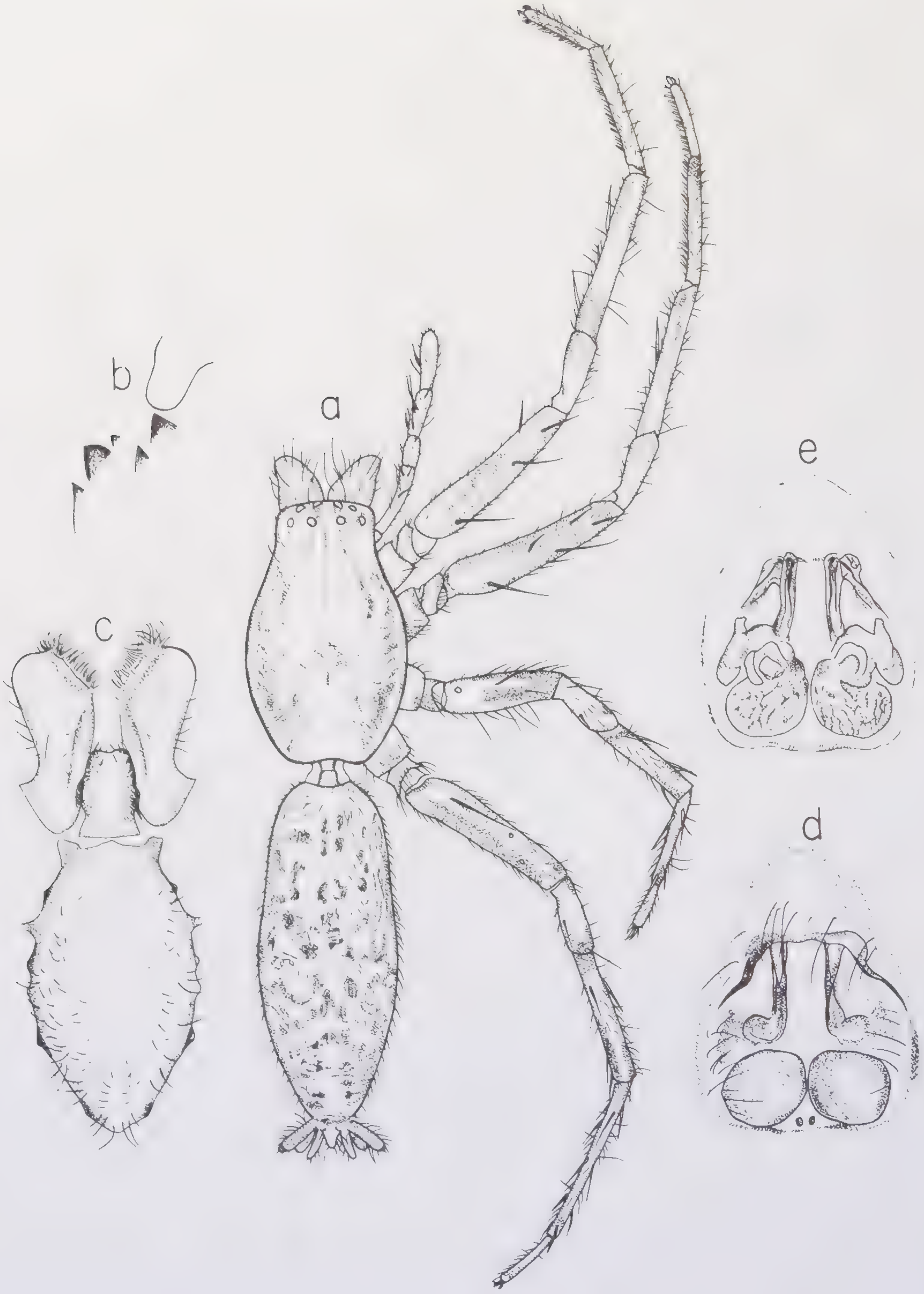

Fig. 55. Female *Clubiona charleneae* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Clubiona charleneae new species
(Figs 55a–e, 56a–d)

Description:
Female: Total length 8.85 mm. Cephalothorax 3.75 mm long, 2.50 mm wide, 1.75 mm high. Abdomen 5.10 mm long, 2.00 mm wide, and 1.50 mm high. Cephalothorax as in male except eye diameter and separation. Eye diameter (mm): ALE = 0.16, PME = 0.15, AME = PLE = 0.13. Eye separation: AME–AME 1.5 times eye diameter, AME–ALE 1.4 times AME diameter, PME–PME twice AME separation, PME–PLE 2.2 times AME diameter, ALE–AME 1.2 times AME diameter. Median ocular quadrangle 1.53 times wider behind than in front, length equal to anterior width. Clypeus height small, 0.70 AME diameter. Sternum, labium, maxillae, and legs similar to male in shape and color. Chelicerae reddish brown, three promarginal teeth with a short and

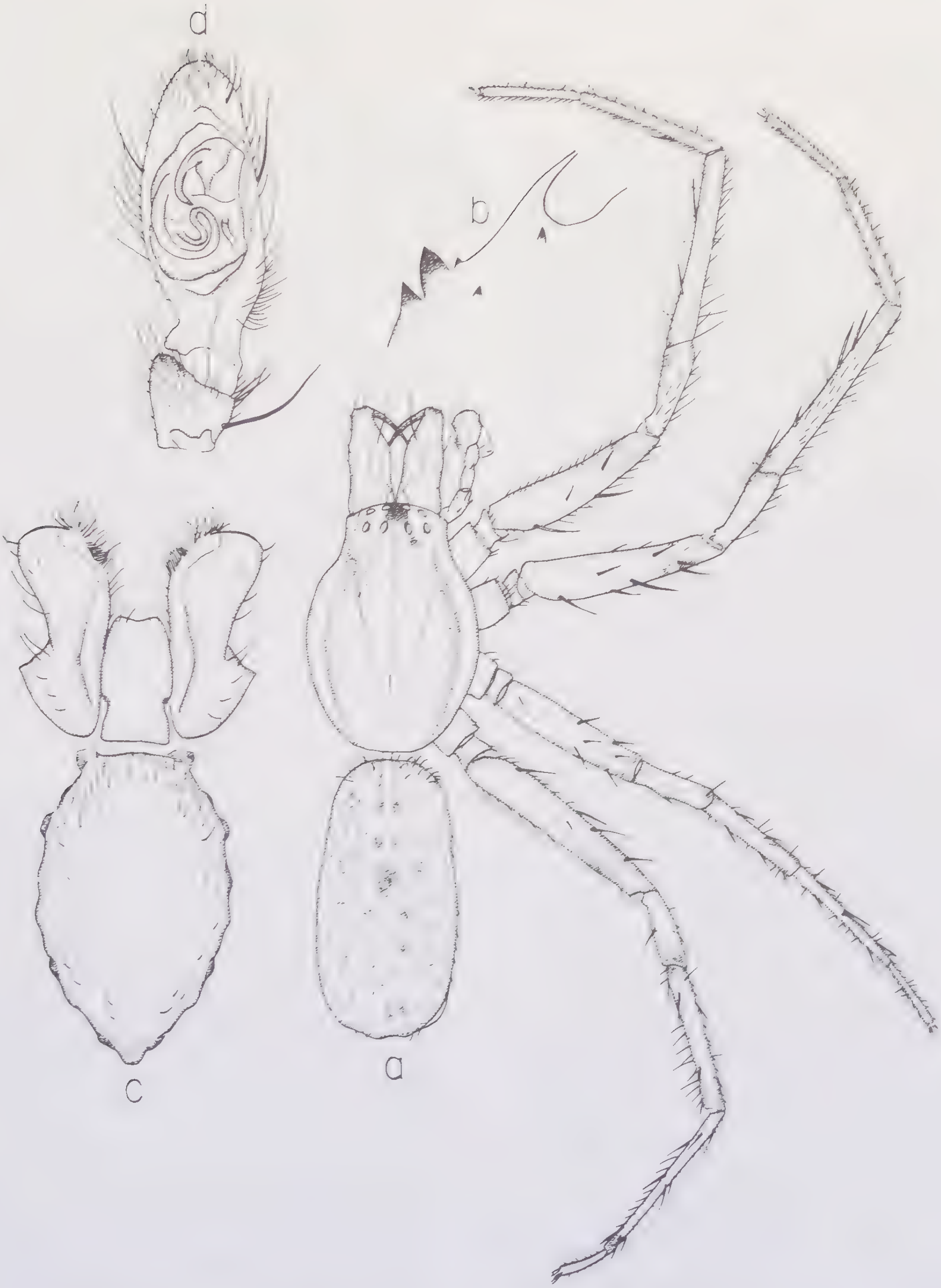

Fig. 56. Male *Clubiona charleneae* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

largely triangular middle tooth, retromargin with two small teeth. Leg long and moderately stout, pattern of bands similar to male. Spination in femora I = 3-0-1-0, II = 3-0-2-1, III = 3-0-2-2, IV = 3-0-1-0; tibiae I = 0-2-0-0, II = 0-1-0-0, III = 0-2-2-2, IV = 0-3-2-2; metatarsi I = 0-0-0-0, II = 0-1-0-0, III = 1-2-3-3, IV = 3-6-3-3. Metatarsus I/tarsus I = 1.85. Leg formula 4213. Pedipalp yellowish brown except reddish tarsi, length shorter than the combined length of tibia IV and patella IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.53	1.30	2.30	1.63	0.88	8.64
2	2.50	1.33	2.45	1.70	1.00	8.98
3	2.25	1.05	1.60	1.62	0.68	7.20
4	2.85	0.95	2.35	3.10	0.80	10.05
Pedipalp	1.10	0.40	0.65	–	1.00	3.15

Abdomen brownish with yellow flecks, median part with an interrupted band from cardiac area to mid-length, four pairs of oblique bands in the posterior one half with inner end points converging in the middle, and five to eight transverse striae posteriorly before the anal tubercle extended laterally as longitudinal irregular striae. Venter uniformly light yellow. All spinnerets visible dorsally and similarly cylindrical and diverging. Epigynum with a cavity posterior to the truncated anterior margin, copulatory long and parallel, copulatory opening wide, becoming acute underneath the lateral edge of anterior epigynal margin, spermathecae subcontiguous close to the lip of the posterior epigynal margin and epigastric groove.

Male: Total length 6.75 mm. Cephalothorax 2.75 mm long, 2.05 mm wide, 1.50 mm high. Abdomen 4.00 mm long, 1.55 mm wide, 1.65 mm high. Cephalothorax brownish yellow with dark brown cephalic area marked by a hat-like brownish gray band posterior to PE and forms an inverted bell-shaped or dome-shaped extension towards the fovea, middle of the entire band with a long longitudinal stripe from the short longitudinal yellow-brown fovea to mid-ME and an oblique stripe from PME to the wing loop of the hat-like band. Thoracic area moderately higher than cephalic, subdorsal part with a broad longitudinal gray-brown band. Eight eyes in two rows, all clear except the slightly dark AME, recurved AE shorter than the straight PE, all globular except slightly ovate ALE. Eye diameter (mm): ALE = 0.16, PME = 0.15, AME = PLE = 0.13. Eye separation: AME–AME as long as one eye diameter. AME–ALE one half ALE diameter, PME–PME 1.8 times AME diameter, PME–PLE 1.5 times AME diameter, ALE–PLE one half ALE diameter. Median ocular quadrangle much wider behind (0.60 mm) than in front (0.40 mm), anterior width and length equal. Ocular height 0.60 AME diameter. Sternum yellow with brownish unindented lateral margins, darker opposite each coxa at the base of the spine-like protrusions, sublateral margins with longer hairs than the median area, anterior margins truncate, and posterior end shortly pointed. Labium reddish brown, longer than wide, lateral margins subparallel, and anterior margins light yellow with cleft median area, and beyond midlength of maxillae. Maxillae with long hairs, yellow except brown outer lateral margins, constricted at midhalf dorsad of base of pedipalp, inner margin slightly concave and with pale gray scopulae apically. Chelicerae reddish brown and moderately robust, hirsute and attenuate apically. Retromargin with two teeth, and three teeth in the promargin, midpromarginal tooth the largest, with the small apical tooth close to its base. Legs moderately long and slender, yellow to yellow-brown with dark brown bands in the apical one half of femora I–IV, apical and basal ends of patellae and tibiae I–IV, and apical one half of metatarsi, metatarsi and tarsi with ventral scopulae and clothed with numerous erect setae. Spination in femora I = II = III = IV = 3-0-2-2; tibiae I = II = 0-4-2-0; III = IV = 0-5-2-2; metatarsi I = II = 0-2-0-0, III = 5-3-3-1, IV = 3-5-4-3. Metatarsus I/tarsus I = 1.63. Tarsi two-clawed and with claw tuft, each claw with at least six teeth. Leg formula 4213. Pedipalp almost as long as combined length of metatarsi I and tarsi I. Tibia with two long macrosetae promarginally and three dorsally. Retrolateral tibial apophysis (RTA) shorter than tibial diameter, subtriangular, and inwardly hooked at tip, apex of tibia near apophysis with a transparent blunt tubercle. Cymbium short with a small spine at apex, longer than wide and bears three macrosetae, embolus, borne on the lateral side, short and fine and its tip bends downward, bare of the long downwardly curved tegular apophysis. Ejaculatory duct with two loops posterad of tegular apophysis.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.15	1.05	2.05	1.55	0.95	7.75
2	2.30	1.10	2.10	1.75	0.98	8.23
3	1.80	0.93	1.40	2.00	0.65	6.78
4	2.70	1.10	2.40	2.85	0.80	9.85
Pedipalp	0.95	0.30	0.45	–	0.75	2.45

Abdomen yellow, widest at midhalf and narrows posteriorly with regularly broken oblongate brown rings, posterior of each ring inwardly curved and triangular-like towards the cardiac area and a brown band in cardiac area dorsally, rings becoming three or four longitudinally broken stripes laterally. Anterior margin with numerous hairs, denser than other dorsal areas. Venter of abdomen yellowish gray and a little longer but narrower than the parallel anterior pair, separated from each other basally by one half its length. Median pair hardly visible ventrally. Anal tubercle subtriangular with a rounded apex and short cylindrical base.

Etymology: Dedicated to Miss Charlene Reyes for patiently typing the manuscript.

Natural history: All collected from kerosene light trap samples in May.

Material examined: PHILIPPINES: *Luzon Is*: Quezon Prov., Real, Llavac, one male holotype, 18 May 1985, A.T. Barrion; three females, one male, and three spiderlings, paratypes, same data as holotype.

Distribution: Philippines.

Remarks: The shape of the cymbium is variable, one of the males showing a longer and more laterally curved cymbium. The paratype female has only one prolateral spine in femur I.

Clubiona gallagheri new species
(Fig. 57ab)

Description:
Female: Total length 9.20 mm. Cephalothorax 3.60 mm long, 2.80 mm wide, 2.40 mm high. Abdomen 5.60 mm long, 3.80 mm wide, 3.00 mm high. Cephalothorax reddish brown, darker in the eye region, and yellowish brown in the hind cephalic, becoming narrowed in the black fovea and extending laterally as a stripe, broadest between coxae II and III, with white hairs and blackish setae. Eyes in two rows, slightly recurved AE shorter than PE. Eye diameter (mm): ALE = 0.20, AME = PME = PLE = 0.18. Separation (mm): AME–AME = 0.20, AME–ALE = 0.25, PME–PME = 0.45, PME–PLE = 0.34. Median ocular quadrangle narrower in front behind. Clypeus height small, less than one half AME diameter. Sternum oval, brown with a black spot and a spun opposite each coxa, lateral margins with more and longer hairs than the middle area. Labium and maxillae typically *Clubiona*. Chelicera moderately robust, retromargin with two teeth and promargin with three, midtooth the largest. Legs yellow-brown with black apices of segments except tibia with both ends black. Spination in tibia I and II = 0-1-0-0; III = 0-3(0-1-2)-2-2, IV = 0-4(1-1-2)-2-2. Metatarsal ventral spines: I = 0, II = 1, III = 4(2-0-2), IV = 5(2-1-2). Leg formula 4213. Pedipalp yellow-brown, moderately swollen along tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.35	1.50	2.20	1.50	0.95	8.50
2	2.90	1.35	2.25	1.65	0.90	9.05
3	2.35	1.00	1.50	1.80	0.65	7.30
4	2.85	1.30	2.30	2.80	0.70	9.95
Pedipalp	1.20	0.40	0.70	–	0.90	3.20

Abdomen grayish brown with yellowish white marking, either longitudinal or transverse. Venter yellowish brown except reddish brown epigynum. Spinnerets typical of the genus. Epigynum simple with a semi-rectangular orifice.

Etymology: Named after Dr Kevin Gallagher, FAO expert in Indonesia.

Natural history: The single specimen was collected dead while digging on a rice panicle in August.

Material examined: INDONESIA: Yogyakarta, Wisma Bethesda, holotype female, 21 August 1989, A.T. Barrion.

Distribution: Philippines.

Clubiona japonicola Boesenberg and Strand
(Figs 58a–f, 59a–e)

Clubiona japonicola Boesenberg and Strand, 1906. Abh. Senckenbg. Nat. Ges. 30 (1–2): 281.

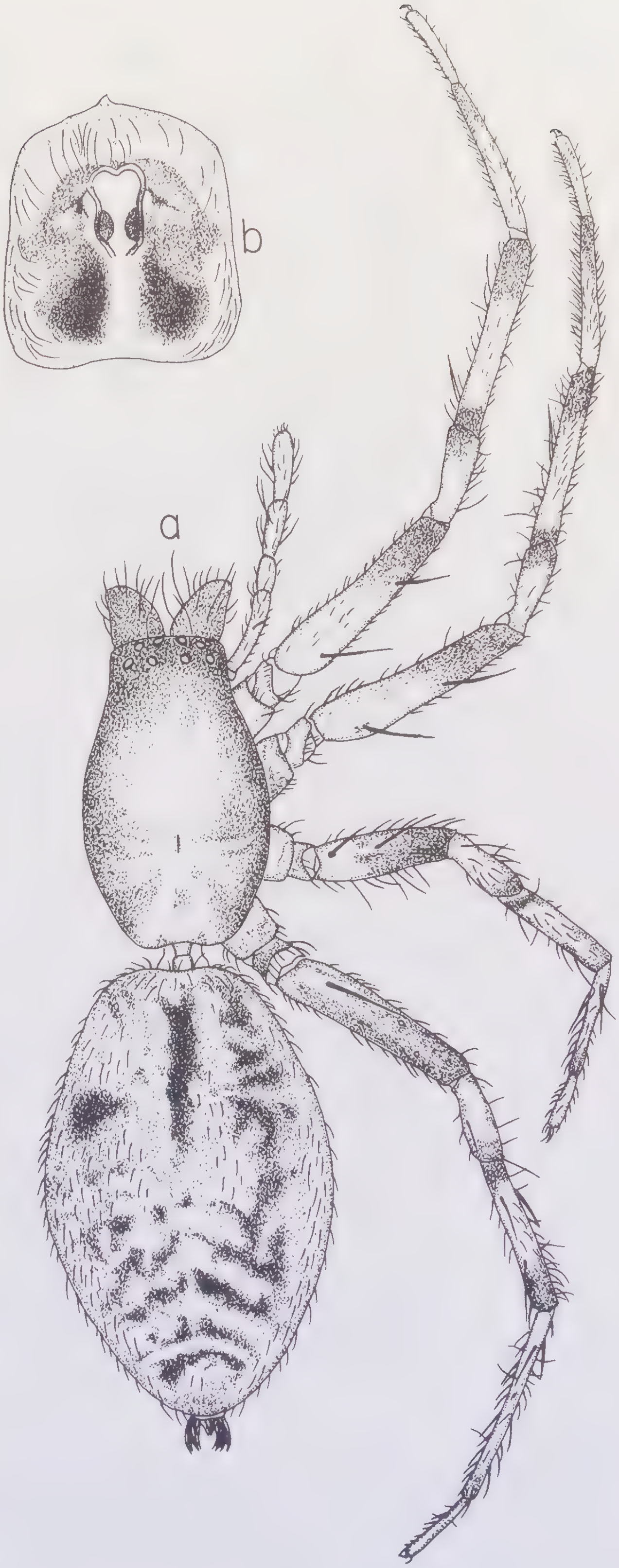

Fig. 57. Female *Clubiona gallagheri* n. sp. (a) and dorsal view of epigynum (b).

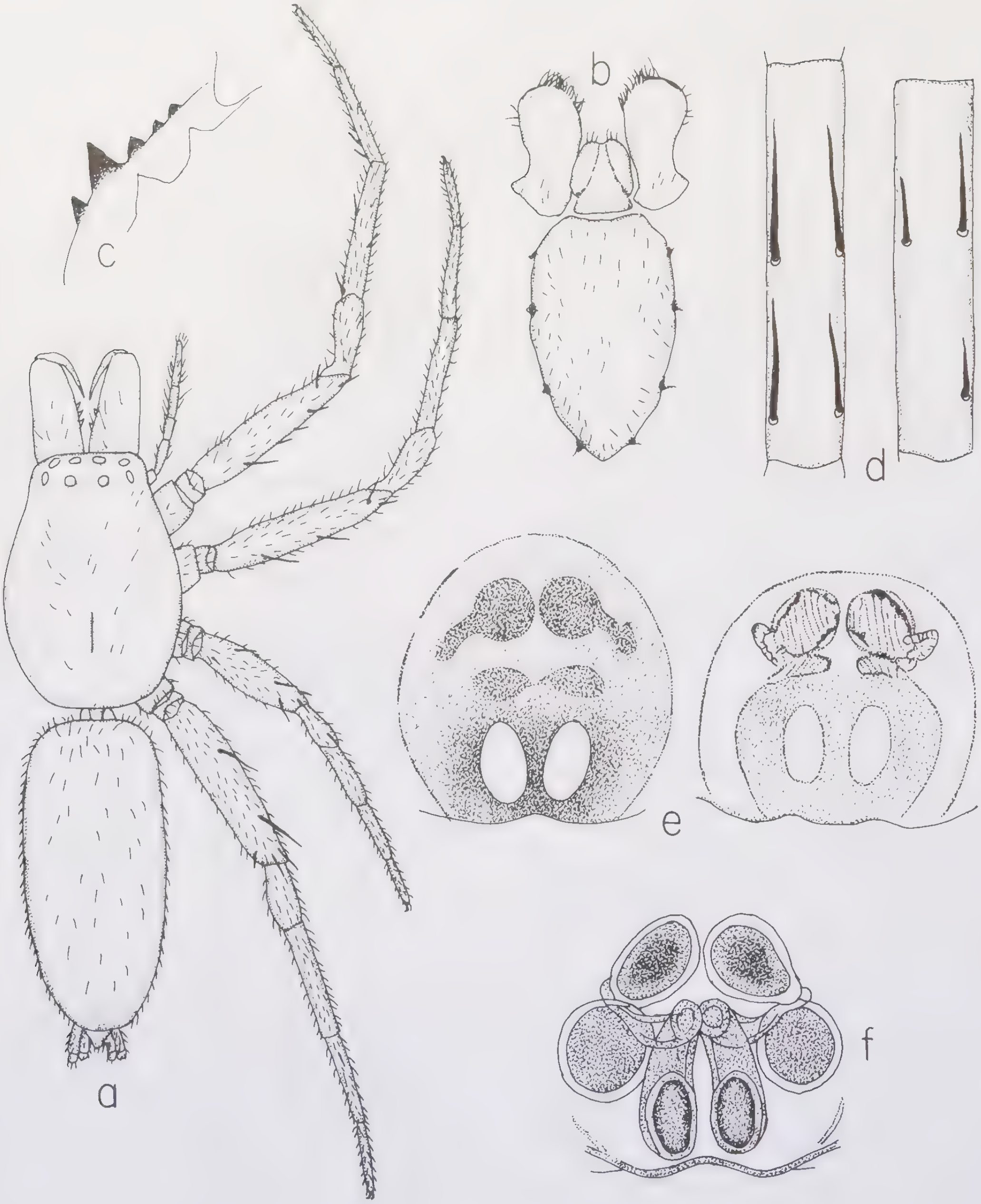

Fig. 58. Female *Clubiona japonicola* Boesenberg and Strand (a); sternum, labium, and maxillae (b); cheliceral teeth (c); ventral spines in tibiae I and II (d); and dorsal (e) and ventral (f) views of epigynum.

Redescription:
Female: Total length 8.25 mm. Cephalothorax 3.10 mm long, 2.22 mm wide, 1.70 mm high. Abdomen 5.15 mm long, 2.66 mm wide, 2.50 mm high. Cephalothorax much longer than wide, reddish brown distally and yellowish proximally, cephalic area more hairy than the thoracic, fovea brown and distinct, without radial furrows. Eyes in two rows, AE recurved, PE nearly straight to slightly procurved. Eye diameter (mm): AME = 0.21, ALE = 0.15, PME = PLE = 0.13. Separation (mm): AME–AME = 0.10, AME–ALE = 0.20, PME–PME = 0.43, PLE–PME = 0.25, ALE–PLE = 0.10. Median ocular quadrangle narrower in front and wider behind. Clypeus height very small, barely one fourth AME diameter. Sternum yellowish brown with spurs and brown spots opposite each leg, longer than wide, truncate ante-

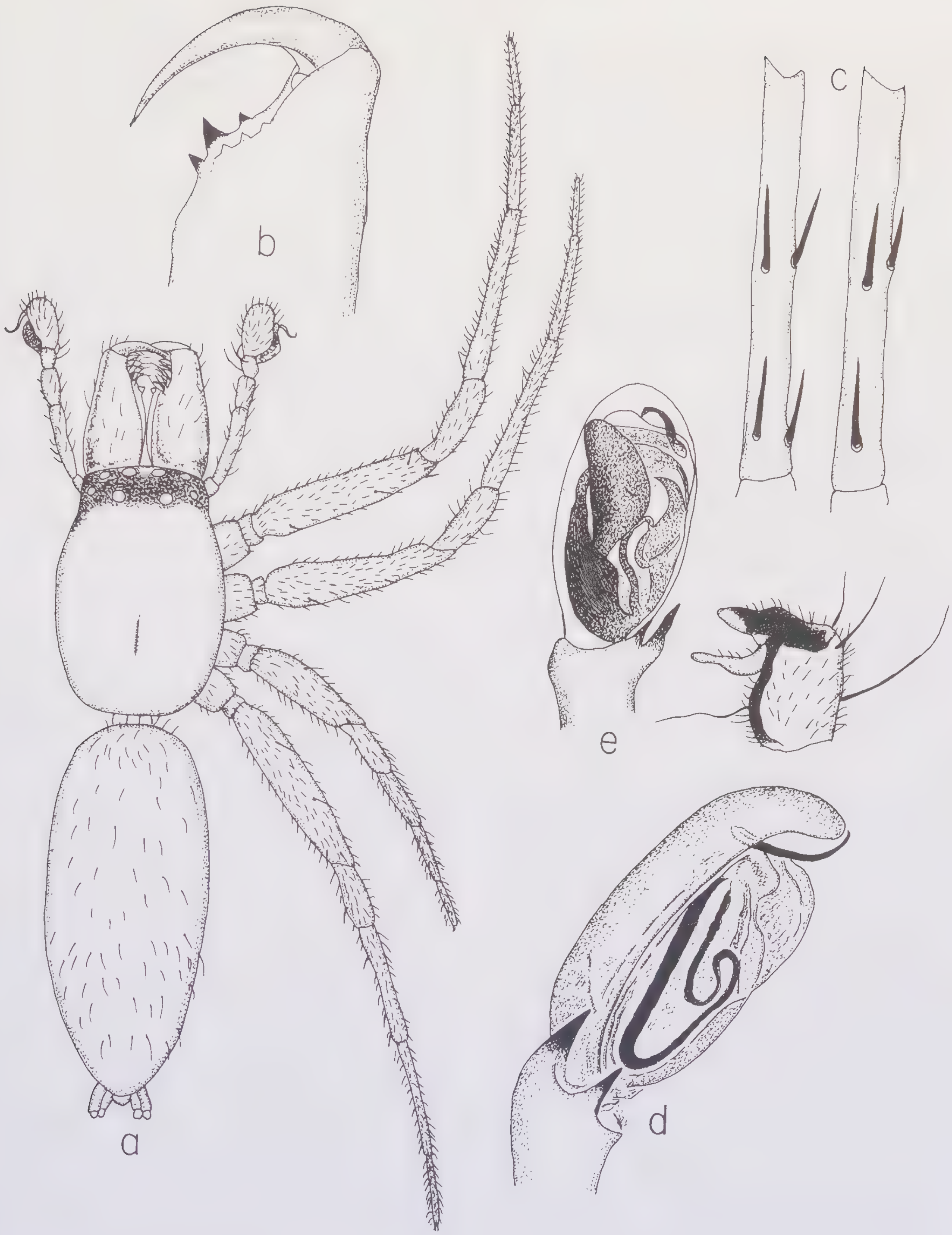

Fig. 59. Male *Clubiona japonicola* Boesenberg and Strand (a); cheliceral teeth (b); ventral spines of tibiae I and II (c); and lateral (d) and ventral (e) views of pedipalp.

riorly, and narrowed to a blunt point posteriorly. Labium reddish brown, yellow on the slightly concave apex, slightly longer than wide, and notched laterally in basal one third. Maxillae similar in color to labium and chelicerae, midlaterals deeply notched on the outer side, apex broader than base, and truncate apically. Chelicerae moderately robust, promargin has three teeth and retromargin two (some specimens with an additional minute tooth apically). Legs long and yellow, with scopulae in the venter of tarsi and metatarsi of legs I and II, spination in femora I = II = 3-0-1-0, III = IV = 3-0-1-1; tibia I = 0-4(2-2-0)-0-0, II = 0-3(1-2-0)-0-0, III = 0-1-2-2, IV = 0-3(1-1-1)-2-2. Metatarsi I and II with two ventral spines each. Leg formula 4213. Pedipalp yellow except yellow-brown tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.80	1.40	1.05	0.60	5.35
2	1.60	0.85	1.45	1.10	0.65	5.65
3	1.35	0.70	1.00	1.06	0.50	4.61
4	1.85	0.90	1.55	1.90	0.65	6.85
Pedipalp	0.85	0.40	0.50	–	0.75	2.50

Abdomen ovoid, yellow with brown hairs, venter yellow with brown marks between epigynum and spinnerets. Spinnerets typical of the genus. Epigynum with a pair of ovoid orifices anterior to epigastric furrow, parallel to each other, separated by a median septum, and with a pair of converging spermathecae anterior of the orifices.

Male: Similar to the female except for smaller size. Total length 6.00 mm. Cephalothorax 2.40 mm long, 1.50 mm wide, 1.30 mm high. Abdomen 3.60 mm long, 1.70 mm wide, 1.90 mm high. Eye diameter (mm): AME = 0.15, ALE = 0.12, PME = PLE = 0.11. Separation (mm): AME–AME = 0.10, AME–ALE = 0.08, PME–PME = 0.30, PME–PLE = 0.18. Median ocular quadrangle wider behind than in front. Clypeus height very small, approximately one third AME diameter. Sternum, labium, and maxillae as in the female. Chelicerae with two retromarginal and three promarginal teeth. Legs long and slender, with fine hairs and moderately long spines. Leg formula 4123. Pedipalp as long as femur I plus patella I, RTA and VTA developed and clamp-like, and embolus coiled on top of tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.85	1.00	1.95	1.50	0.80	7.10
2	1.95	0.80	2.00	1.55	0.75	7.05
3	1.50	0.75	1.10	1.40	0.60	5.35
4	1.90	1.00	1.80	2.20	0.65	7.55
Pedipalp	0.80	0.30	0.40	–	0.75	2.25

Natural history: The specimens were field-collected within their triangularly folded chamber of rice leaves from July to August in upland rice and September to March in irrigated rice.

Material examined: PHILIPPINES: *Luzon Is*: Laguna Prov., Los Baños , IRRI Farm, six females and two males, 10 September 1979; Liliw, Tuybaana Vill., four females, one male and 28 spiderlings, 22 February 1989, M. Perez and A.T. Barrion; Victoria, Masapang, one male and one female. 18 September 1981, G. Aquino; Batangas Prov., Tanauan, Janopol Vill., five females and two males, 22 July 1977, A.T. Barrion; Cale Vill., four young females, 23 July 1977, A.T. Barrion; *Panay Is*: Iloilo, Oton, two females and five spiderlings, 24 August 1978, M.D. Lumaban; *Palawan Is*: Narra, one female, 28 September 1987, A.T. Barrion; *Mindanao Is*: Misamis Oriental Prov., Claveria, Hinaplanan Vill., two females and two males, 24 June 1986, A.T. Barrion; **INDONESIA:** Yogyakarta Prov., Klaten, Mgawen Vill., one male and one female, 22 August 1989, A.T. Barrion; **THAILAND:** Prachinburi Prov., Prachinburi Rice Research Station, one male, 26 July 1989, A.T. Barrion.

Distribution: Well distributed in temperate Japan, China, Korea, and common in the rice-growing tracts of South and Southeast Asia.

Clubiona pahilistapyasea new species

(Fig. 60a–d)

Description:

Female: Total length 7.15 mm. Cephalothorax 2.60 mm long, 2.00 mm wide, 1.35 mm high. Abdomen 4.55 mm long, 2.30 mm wide, 2.00 mm high. Cephalothorax yellow with a brown longitudinal fovea, yellow-brown eye area, and black eye rings, black ring contiguous in the inner area of AME. Eight eyes in two rows, straight to distally recurved AE shorter (0.78 mm) than slightly procurved PE (0.98 mm). Eye diameter (mm): ALE = 0.15, AME = PME = 0.13, PLE = 0.10. Eye separation: AE equally separated, as long as 0.60 diameter of AME, PME–PME 2.2 times diameter of AME, PME–PLE 1.2 times AME diameter, ALE–PLE one half diameter of AME. Median ocular quadrangle 1.6 times wider behind than in front (0.30 mm), length longer than anterior width. Clypeus height small, 0.40 diameter of AME. Sternum hirsute, yellow to yellowish brown, longer (1.28 mm) than wide (0.88 mm), anterior margin with a lateral flange and a median elevation, posterior end truncated between coxae IV. Labium brownish red, longer (0.48 mm) than wide (0.29 mm), distal end yellow with a very slight cleft in the middle, above midlength of maxillae. Maxillae yellowish brown, laterally constricted at midhalf on the outer side, inner lateral margin with a shallow cavity covered by sides of labium, apico-inner one third bears scopulae. Chelicerae brown, moderately robust, and with indistinct boss. Promargin bears three teeth, middle tooth the largest, basal tooth on tip of the longitudinal ridge. Retromargin with two teeth. Legs yellow, moderately long and slender, femora I and coxae IV stout. Spination in femora I–IV = 3-0-1-1; tibia I = II = 0-4-0-0, dorsal of each tibia with fine setae, III = 2-2-2-2, IV = 2-3-2-2; metatarsi I = II = 0-0-0-0, III = 5-4-2-1, IV = 6-6-2-1. Venter of all tarsi, metatarsi I

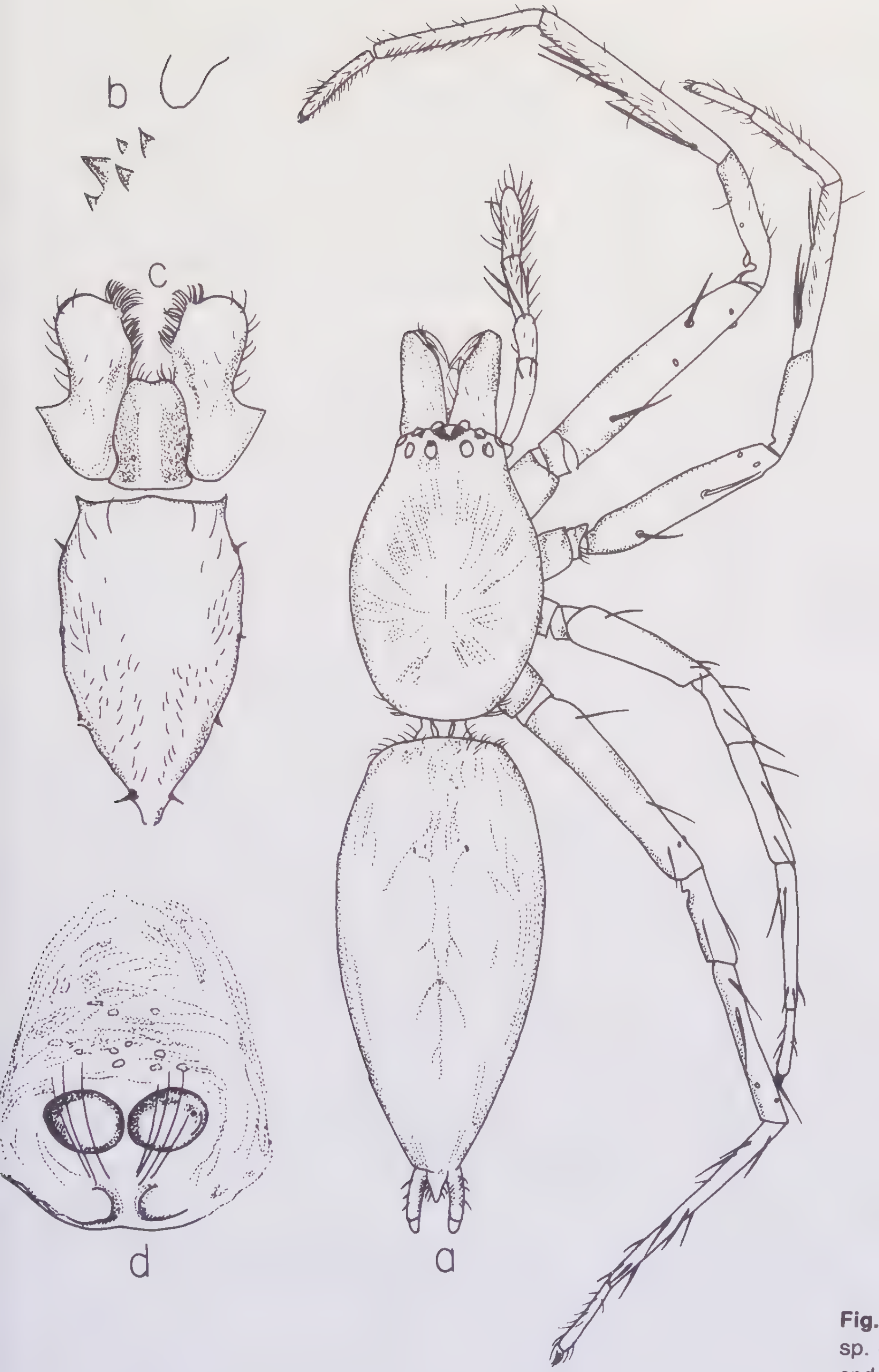

Fig. 60. Female *Clubiona pahilistapyasea* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and epigynum (d).

and II, laterals of tibia I and II with scopulae. Patella I and II with a pair of ventral setae. Metatarsus I/tarsus I = 1.60. Tarsi two-clawed, each superior claw with at least eight teeth and claw tuft moderately clubbed. Leg formula 4213. Pedipalp twice longer than metatarsi I, tarsi brownish ventrally and yellow in most parts with an obliquely cut or truncated tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.90	1.15	1.95	1.25	0.78	5.63
2	1.80	0.93	1.55	1.05	0.60	5.93
3	1.40	0.58	1.00	1.20	0.50	4.68
4	2.40	0.88	1.80	2.65	0.73	8.46
Pedipalp	0.80	0.35	0.60	–	0.75	2.50

Abdomen yellow, oblongate, apex of abdomen rounded with a sparse cluster of curved setae and tapers posteriorly. Posterior and anterior spinnerets equally long, posterior pair nearly three times longer than the subtriangular anal tubercle. Anterior spinnerets more robust than the posterior pair, their basal diameter three times that of the posterior spinnerets. Ovoid shaped epigynum with a median pair of slightly oblique subglobular spermathecae and a pair of C-shaped cavities opposite each other located dorsad of the posterior epigynal margin. A pair of spherical spermathecae located anterior to the oblique cavities.

Etymology: Derived from the obliquely truncate apex of tarsi of pedipalp, 'pahilis na tapyas' in Tagalog.

Natural history: The female holotype was collected by sweeping the foliage of upland rice, paratype female was collected from cogonal grassland in August.

Material examined: PHILIPPINES: *Mindanao Is*: Zamboanga del Sur, Betinan, Philippine–Australian Development and Agricultural Project (PADAP) Experimental Station, holotype female, 8–9 August 1979, A.T. Barrion; Molave, Bureau of Plant Industry Experiment Station, one female paratype, 10–12 August 1979, A.T. Barrion.

Distribution: Philippines.

Clubiona pototanensis new species
(Fig. 61a–d)

Description:

Female: Total length 5.05 mm. Cephalothorax 2.25 mm long, 1.50 mm wide, 0.85 mm high. Abdomen 2.80 mm long, 1.35 mm wide, 1.08 mm high. Cephalothorax typical of the genus, yellow with yellow-brown eye area, black eye rings, and short brown longitudinal fovea, dorsally clothed with fine hairs, cephalic hairs prominently longer than the thoracic hairs. Eight eyes in two rows, all clear except darker AME. AE row straight to slightly recurved, ca. 0.80 of PE row. PE row procurved. Eye diameter (mm): ALE = 0.14, PME = 0.13, AME = 0.10, PLE = 0.08. Eye separation: AME–AME 0.80 eye diameter, AME–ALE one half AME diameter, PME–PME wide apart, about twice PME or 2.5 times AME diameter, PME–PLE as long as one PME or 1.3 times AME diameter, ALE–PLE as long as AME separation. Median ocular quadrangle prominently wider behind (0.48 mm) than in front (0.30 mm), anterior width and length equal. Clypeus height small, one half AME diameter. Sternum yellow, longer than wide, similar to *C. topakea*. Labium one third longer than wide, beyond midlength of maxillae, yellow-brown except light yellow distal end, laterally indicated in the basal one-third and midanterior margin slightly cleft. Maxillae yellow, slightly brownish in constricted midlateral margin, apically globular with a cavity opposite labium in the inner margin and scopulae anterior to it. Chelicerae brown, moderately strong, both margins with four teeth each, promarginal teeth larger than the retromarginal, with its subbasal tooth the largest. Legs yellow to pale yellow brown in the metatarsi and tarsi. Spination in femora I and II = 3-0-1-0, III and IV = 3-0-1-1; tibiae I and II = 0-4-0-0, III = 1-2-2-2, IV = 0-3-2-2; metatarsi I and II = 0-0-0-0, III = 3-4-3-2, IV 3-5-3-3. Metatarsus I/tarsus I = 1.77. Midventral pair of spines almost reaching apex and the subbasal pair nearly touching the midventral pair in tibiae I. Tarsi two-clawed, each superior claw with at least seven teeth, claw tuft thick, plumose, and clubbed at tip. Leg formula 4213. Pedipalp almost as long as tibia II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.38	0.75	1.15	0.85	0.48	4.61
2	1.60	0.80	1.40	1.00	0.56	5.36
3	1.10	0.45	0.85	0.88	0.40	3.68
4	2.83	0.70	1.55	1.95	0.55	6.58
Pedipalp	0.55	0.20	0.30	–	0.40	1.45

Abdomen pale yellow-brown with subtruncate and dense row of curved hairs anteriorly, median with two longitudinal rows of hairs transversely arranged in nine pairs. Laterals with three to five shallow longitudinal grooves, narrowed posteriorly before the dorsally visible triangular anal tubercle, and equally long posterior and anterior spinnerets. Venter of abdomen yellow, except brownish epigyne, with a transverse groove subposteriorly and a half circular transverse row of long hairs before the base of the closely set anterior spinnerets. Epigynum without a distinct orifice and cavity, posterior end touching the epigastric furrow moderately cleft, copulatory tube long, two pairs spermathecae with the apical pair convergingly touching each other and the other pair slightly below it, the two sets forming an oblique pair resembling a figure 8.

Etymology: Named after the type locality.

Natural history: A single female was collected by sweep net from the rice garden of Engineer H. Jamandre in September.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Iloilo, Pototan Vill., holotype female, 24 September 1981, P.C. Pantua.

Distribution: Philippines.

Clubiona kapataganensis new species
(Fig. 62a–e)

Description:

Female: Total length 11.75 mm. Cephalothorax 4.55 mm long, 3.30 mm wide, 2.13 mm high. Abdomen 7.20 mm long, 3.40 mm wide, 3.15 mm high. Cephalothorax brownish yellow, darker in the eye area and with black eye rings. Boundary of cephalic area lined with long black hairs from posterior of PE row to the anterior of brown longitudinal fovea, forming eight to ten longitudinal rows of different lengths and number of hairs. Eye area clothed with fine short white hairs and long dark brown hairs. Eight eyes all clear and in two rows,

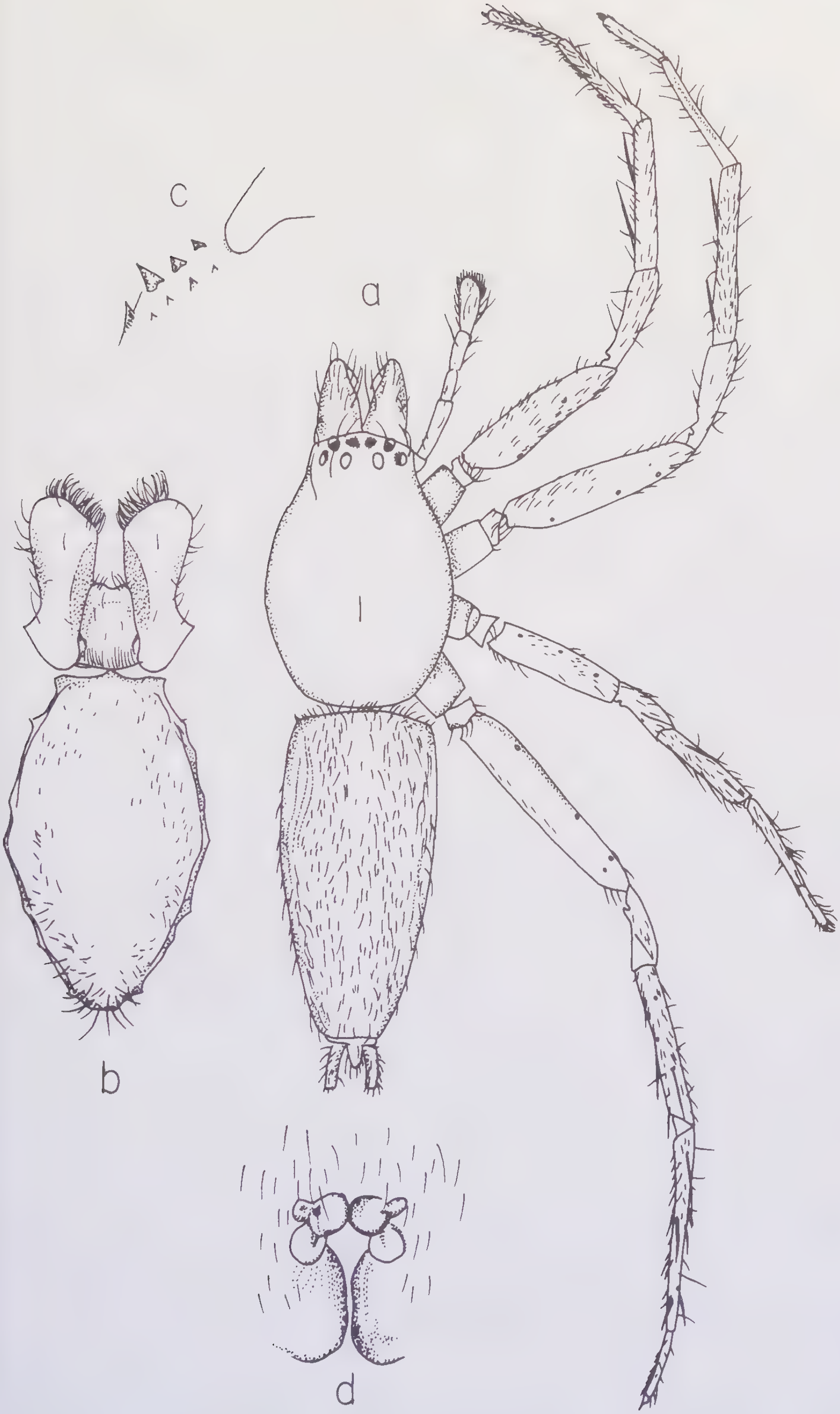

Fig. 61. Female *Clubiona pototanensis* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and epigynum (d).

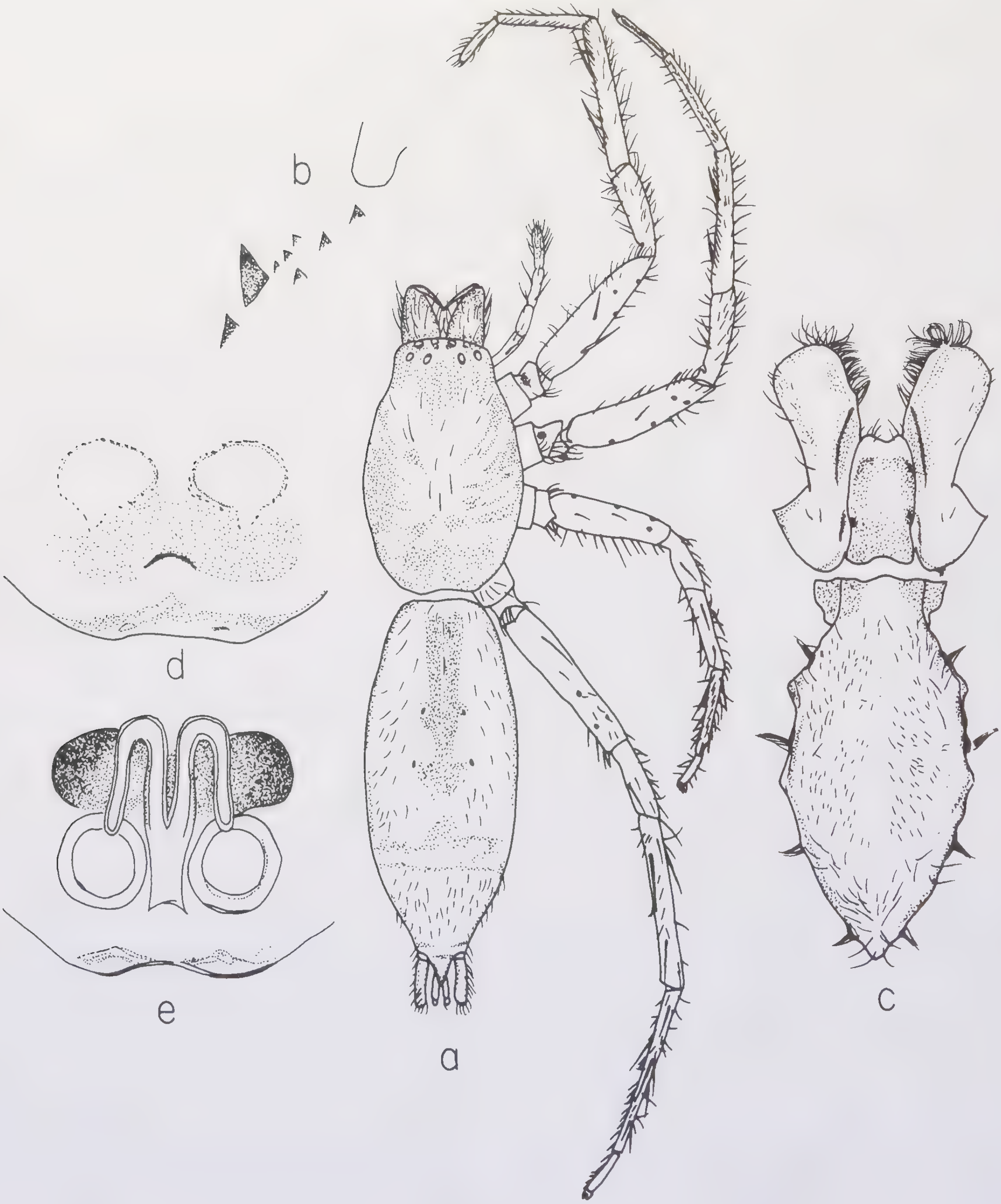

Fig. 62. Female *Clubiona kapataganensis* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

recurved AE row shorter (1.35 mm) than the straight PE row (1.80 mm). Eye diameter (mm): AME = 0.20, ALE = 0.19, PME = PLE = 0.13. Eye separation: AME–AME 1.15 times eye diameter. AME–ALE as long as diameter of AME, PME–PME three times AME diameter, PME–PLE 1.9 times diameter of AME, ALE–PLE as long as diameter of ALE. Median ocular quadrangle 1.33 times wider behind than in front (0.68 mm), anterior width much longer than length (0.53 mm). Clypeus height moderately small, 0.65 times diameter of AME. Sternum yellow subovate, moderately rebordered brownish yellow, anterior end straight and laterally constricted before apex, posterior end shortly blunt between closely spaced coxae IV. Labium brownish red, similar to maxillae, one third longer than wide, reaching 0.60 height of maxillae, nearly parallel-sided except slight, lateral constriction below midhalf, distal end yellow with a cleft median. Maxillae constricted laterally at midhalf on the outer side, with a moderately deep cavity on the inner side and a yellowish scopula anterior to the cavity. Chelicerae strong and moderately robust, attenuate, and with hairs fronto-dorsally. Promargin bears scopulae and five teeth, with the subbasal tooth the largest and apical three teeth very minute. Retromargin with three small teeth. Boss small. Legs yellow-brown, long and slender, scopulae present in the venter of all tarsi, metatarsi, and tibiae I–II, metatarsi III and IV with prolateroventral scopulae. Spination in femora I = II = III = 3-0-2-2, IV = 3-0-1-1; tibiae I = II = 0-4-0-0, III = 0-3-1-1, IV = 0-3-2-2; metatarsi I = II = 0-0-0-0, III = 3-4-3-3, IV = 3-5-3-3. Metatarsus I/tarsus I = 2.04. Tarsi two-clawed, each claw with 6–11 teeth. Claw tuft dense, clubbed, and plumose. Leg formula 4213. Pedipalp nearly as long as metatarsi IV, tibia with four prolateral setae, tarsi truncate to oblique on tip, and bearing three prolateral and one ventral setae.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.25	1.85	2.80	2.00	0.98	10.88
2	3.60	2.10	3.30	2.35	1.05	12.40
3	2.80	1.40	2.00	2.40	0.85	9.45
4	4.00	1.85	3.40	3.90	1.10	14.25
Pedipalp	1.30	0.63	0.90	–	1.10	3.93

Abdomen elongate, yellow with a brownish hue in the cardiac area, and clothed with short brown hairs, anterior margin with a moderately thick cluster of curved hairs. Posterior spinnerets moderately long and cylindrical, separated basally by one half its length. Median pair more slender and cylindrical than the posterior pair and visible dorsally. Anterior pair the shortest but more robust basally. Dorsad base of anterior spinnerets is a transverse ring of setae. Epigynum with a transverse sclerotized posterior margin, median part slightly cleft. No cavity visible. Spermathecae visible, apical pair dark red brown and contiguous, posterior pair yellow and hardly visible.

Etymology: Named after type locality.

Natural history: Two females were collected by sweeping cogonal grassland on a sloping hill in January.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Kapatagan Vill., holotype female, 16 January 1985, A.T. Barrion, paratype female, same data on holotype.

Distribution: Philippines.

Remarks: The morphological characters of *C. kapataganensis* are close to those of the male *C. turongdaliriana*. However, the specimens were collected separately from two different areas, hence the two sexes cannot be properly associated.

Clubiona topakea new species
(Fig. 63a–d)

Description:

Female: Total length 3.95 mm. Cephalothorax 170 mm long, 1.40 mm wide, 0.75 mm high. Abdomen 2.25 mm long, 1.25 mm wide, 0.93 mm high. Cephalothorax yellow except light brown eye area, longitudinal fovea and black eye rings, moderately convex to flat dorsally. Eight eyes in two rows, all clear except slightly dark AME, short AE slightly recurved. PE longer than AE and procurved. Eye diameter (mm): AME = ALE = PME = 0.10, PLE = 0.08. Eye separation: AME–AME = PME–PLE as long as one AME diameter, AME–ALE 0.8 AME diameter, PME–PME wide apart, 2.4 times AME diameter. Median ocular quadrangle one fourth wider behind (0.41 mm) than in front (0.30 mm), anterior width one sixth greater than length. Clypeus height very small, one third AME diameter. Sternum yellow, ovate, anterior end truncate with a moderate extension apicolaterally, lateral margins with spine-like protrusions opposite each coxa and without concave cavities, posterior end blunt with more erect hairs, median area with fewer and shorter hairs than the lateral margins. Labium yellow-brown and rebordered, one third longer than broad, ca. 0.60 of maxillae's length, apical end pale yellow and truncated. Maxillae same color as labium, longer scopulae on the inner apical one fourth. Chelicerae brown, moderately strong, promargin bears four teeth, with the subbasal tooth the largest, retromargin with three teeth. Legs uniformly yellow, short, and moderately slender. Spination in femora I = II = 3-0-1-0, III = IV = 3-0-1-1; tibiae I = II = 0-4-0-0, III = 0-1-1-1, IV = 0-3-2-2, metatarsi I = II = 0-2-0-0, III = 5-4-1-1, IV = 6-4-1-1. Ventral spines of metatarsi I equally long, in metatarsi II prolateral spine much shorter than the very long retrolateral spine, which is as long as 0.75 of metatarsal length and wavy subapically. Metatarsus I/tarsus I = 1.43. Tarsi two-clawed, each superior claw with at least seven teeth, claw tuft thick, plumose, and clubbed. Leg formula 4213. Pedipalp yellow with yellowish tarsi, almost as long as combined length of metatarsi II and tarsi II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.78	0.45	0.73	0.50	0.35	2.81
2	0.90	0.50	1.38	0.65	0.40	3.83
3	0.75	0.38	0.58	0.60	0.30	2.61
4	1.03	0.50	1.00	1.15	0.40	4.08
Pedipalp	0.30	0.20	0.23	–	0.30	1.03

Abdomen yellow dorsally, laterally, and ventrally, anteriorly truncated, and bears dense cluster of curved hairs, broadest subposteriorly and tapering before the slender and cylindrical posterior spinnerets. Median spinnerets slightly visible dorsally. Anterior spinneret stout, shorter than the posterior pair of spinnerets, bases near each other and with a pale yellow membrane

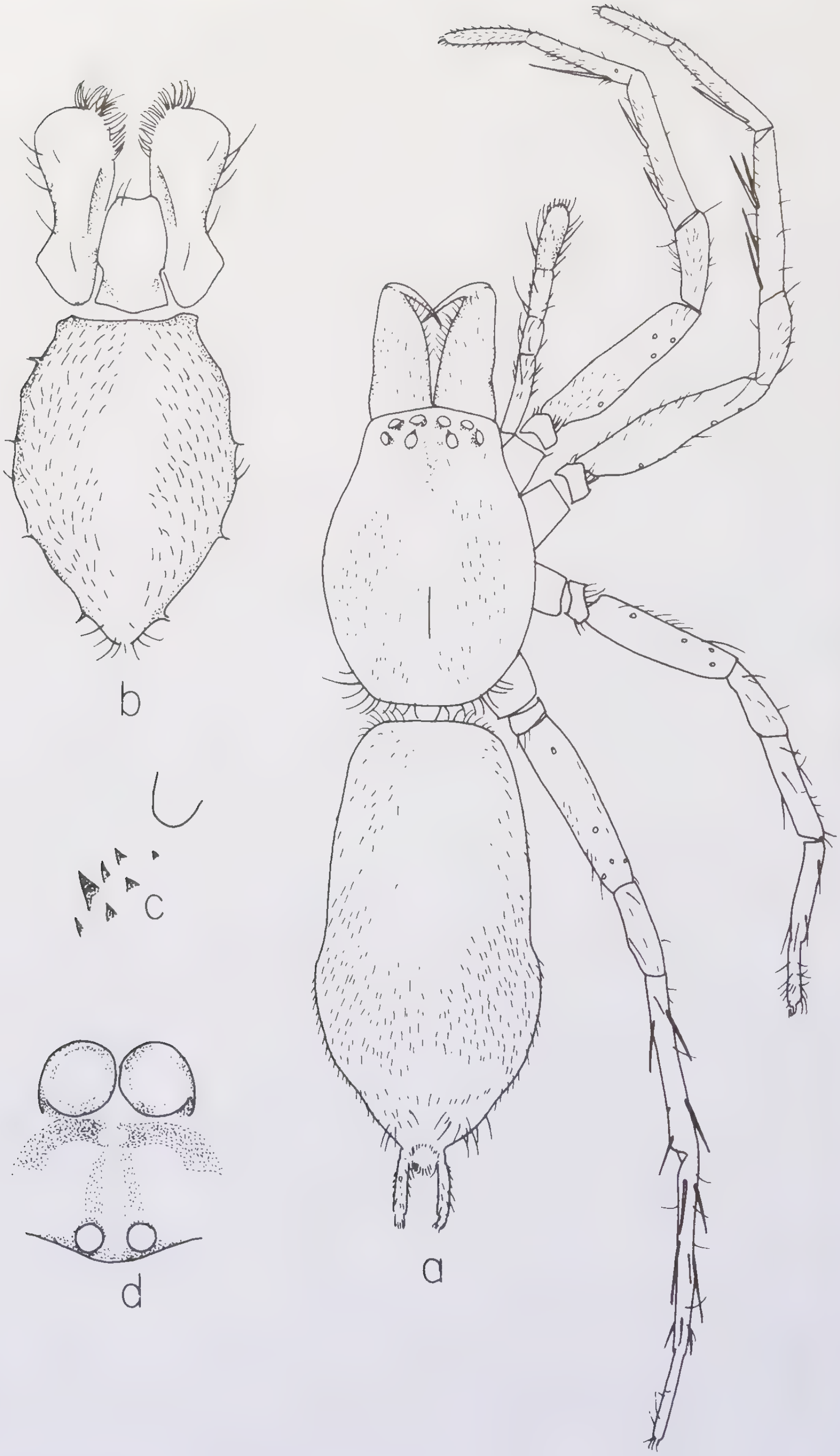

Fig. 63. Female *Clubiona topakea* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and epigynum (d).

basally, anterior of pale yellow membrane is a half circular row of hairs, the middle of which bears three pairs of converging hairs with a hairless area in between. Epigynum simple, with a pair of small circular orifices touching the epigastric groove, separated by a diameter of one orifice and connected by a transverse line a little above the epigastric groove. Two pairs spermathecae, copulatory tube inverted h-shaped with the spermathecae on opposite ends, anterior pair of spermathecae largely globular and close to each other, posterior pair small and separated from each other by one diameter of posterior spermatheca.

Etymology: Named after systematist with unsympathetic attitudes.

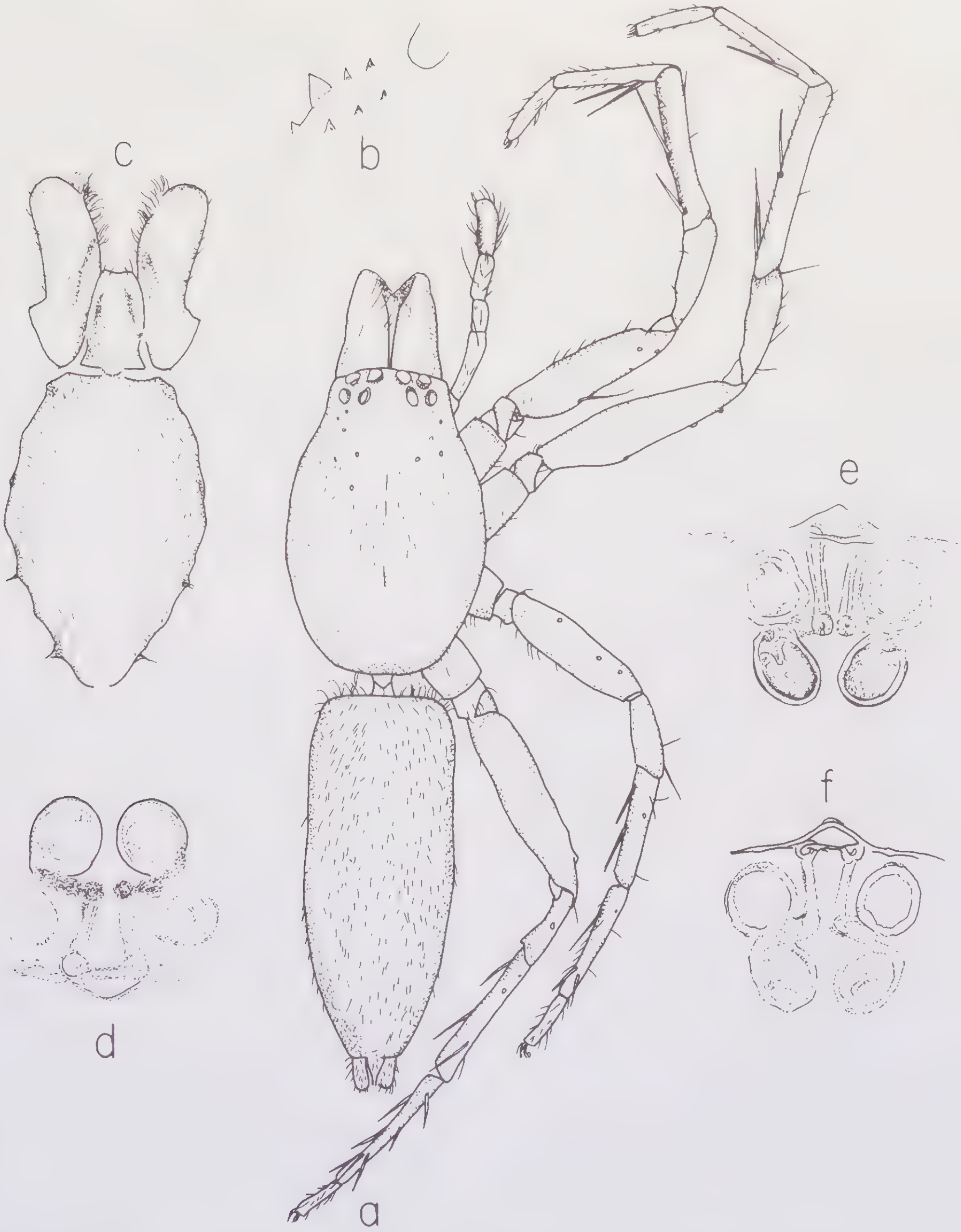

Fig. 64. Female *Clubiona hugisva* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal view of unmounted (d) and mounted (e) and ventral (f) view of epigynum.

Natural history: All the female specimens were collected by D-Vac suction machine in cogon (*Imperata cylindrica*) grassland in February.

Material examined: PHILIPPINES: *Panay Is.*, Capiz Prov., Dumarao, Astorgas Vill., holotype female, 16 February 1981, A.T. Barrion, four female paratypes, 17 February 1981, A.T. Barrion.

Distribution: Philippines.

Clubiona hugisva new species
(Fig. 64a–f)

Description:

Female: Total length 3.54 mm. Cephalothorax 1.45 mm long, 1.10 mm wide, 0.85 mm high. Abdomen 2.09 mm long, 0.93 mm wide, 1.00 mm high. Cephalothorax yellow except yellow-brown eye area, black eye rings, and brown longitudinal fovea. Eight eyes in two rows, AE row straight to slightly recurved, shorter (0.53 mm) than the slightly procurved to straight PE row (0.66 mm). Eye diameter (mm): ALE = 0.11, AME = PME = PLE = 0.10. Eye separation: AME–AME = AME–ALE = ALE = PLE equal to one half diameter AME, PME–PME twice diameter of AME, PME–PLE as long as AME diameter. Median ocular quadrangle 1.6 times broader behind than in front, length and anterior width equal (0.25 mm). Clypeus height very small, one third diameter of AME. Sternum yellow with yellowish brown margins, anterior end straight without apicolateral flange, posterior end narrowly rounded between coxae IV, moderately hirsute with a pale yellow transverse band in the apical one third opposite coxae II. Labium same color as yellow-brown maxillae, as long as 0.60 length of maxillae, longer (0.30 mm) than wide (0.18 mm), basal one third constricted laterally, distal margin pale yellow with a median cleft. Maxillae longer than wide, inner lateral margin with a shallow cavity and scopulae in its apical part and outer lateral margin constricted at midhalf. Chelicerae brownish yellow, moderately small, hairy frontally and with promarginal scopulae. Retromargin bears three teeth and promargin four teeth, subbasal tooth the largest and the basal tooth borne on the tip of the longitudinal ridge. Legs yellow and short, thin scopulae present in the venter of all tarsi, metatarsi I–III, and apical one half to one third of tibiae I and II. Spination in femora I = II = 3-0-1-0, III = 3-0-0/1-0; tibiae I–II = 0-4-0-0, III = 0-2-1-1, IV = 0-3-2-2; metatarsi I–II = 0-2-0-0, III = 4-4-1-1, IV = 5-4-2-2. Metatarsus I/tarsus I = 1.65. Longest metatarsal ventral spines about 0.70–0.90 length of metatarsi in legs I and II and extended to basal one fourth of tarsi II in leg II. Ventral scopulae light or sparse in all tarsi, metatarsi, and tibiae. Tarsi two-clawed, each superior claw with at least six teeth, claw tuft plumose and clubbed, particularly in legs III and IV. Leg formula 4213. Pedipalp yellow with yellow-brown tarsi, longer than combined length of tarsi and metatarsi of either leg I, II or III, longer than all femora except femora II, tibia with a pair of subapical and submedian prolateral setae, tarsal spination = 0-2-3-1. Tip of tarsi obliquely truncated.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.80	0.43	0.69	0.51	0.31	2.74
2	0.98	0.55	0.72	0.64	0.25	3.14
3	0.75	0.35	0.50	0.60	0.33	2.53
4	0.94	0.48	0.90	1.18	0.45	3.95
Pedipalp	0.34	0.14	0.18	–	0.30	0.96

Abdomen elongated, height greater than width, yellow and clothed with short fine light brown hairs, anterior part with a dense cluster of curved setae, laterals and venter similar to dorsum. Spinnerets visible dorsally, posterior pair as long as the anterior pair, the latter, however, have a stouter base. Anal tubercle with a narrow brown transverse base, one third shorter than posterior spinnerets. Epigynum with two pairs of spermathecal sacs, anterior pair not touching but converging towards each other and hardly visible, posterior pair located midlaterally between anterior pair and the minute pair of spherical orifices, orifices joined by a pair of transverse bands and a small pointed scape dorsad of the epigastric furrow.

Etymology: Named after the V-shaped scape-like process connecting the two small orifices projected towards the epigastric furrow.

Natural history: A single female collected from flower buds of *Cajanus cajan* in January.

Material examined: **PHILIPPINES:** *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 9 January 1985, A.T. Barrion.

Distribution: Philippines.

Clubiona victoriaensis new species

(Fig. 65a–e)

Description:

Female: Total length 4.75 mm. Cephalothorax 1.75 mm long, 1.35 mm wide, 0.88 mm high. Abdomen 3.00 mm long, 1.70 mm wide, 1.50 mm high. Cephalothorax yellow brown except black eye margins, broadest in AME, and long brown longitudinal fovea. Fine short hairs clothe entire carapace, two pairs of long hairs in the clypeus, a single long hair between AME, about six behind PME, and longitudinal row of moderately short hairs between PME and fovea. Cephalic area subparallel laterally and thoracic area broadest between coxae II and III. Eight eyes in two rows, all with narrow black rings except AME, AME row slightly procurved and shorter (0.58 mm) than the slightly procurved PE row (0.73 mm). Eye diameter (mm): ALE = PLE = PME = 0.10, AME = 0.08. Eye separation: AME–AME 1.6 times diameter of AME, AME–ALE 0.60 diameter of AME, PME–PME three times diameter of AME, PME–PLE as long as diameter of PME or 1.25 times AME diameter, ALE–PLE as long as one half PME diameter. Sternum yellow and hirsute, longer (0.98 mm) than wide (0.63 mm), anterior margin with a small flange laterally and slightly concave in 0.60 of its width, posterior end blunt between coxae IV. Labium one third longer than wide, brown except yellow apical margin with a moderately deep cleft, basolateral one third constricted, beyond midlength of endites. Maxillae same color as labium except the gray-brown constricted outer lateral margin, typical of other *Clubiona*. Chelicerae brown, swollen dorsosubmedially, scopulae present in the attenuate apical part, and small boss laterobasally on the outer side. Promargin bears four teeth, basal tooth dorsad of the longitudinal ridge and subbasal tooth the longest. Retromargin with three teeth in decreasing size towards apex. Legs moderately long, yellow with brownish tarsi and metatarsi. Spination in femora I = II = 3-0-1-0, III = IV = 3-0-1-1, tibia I = II = 0-4-0-0, III = 0-2-1-1,

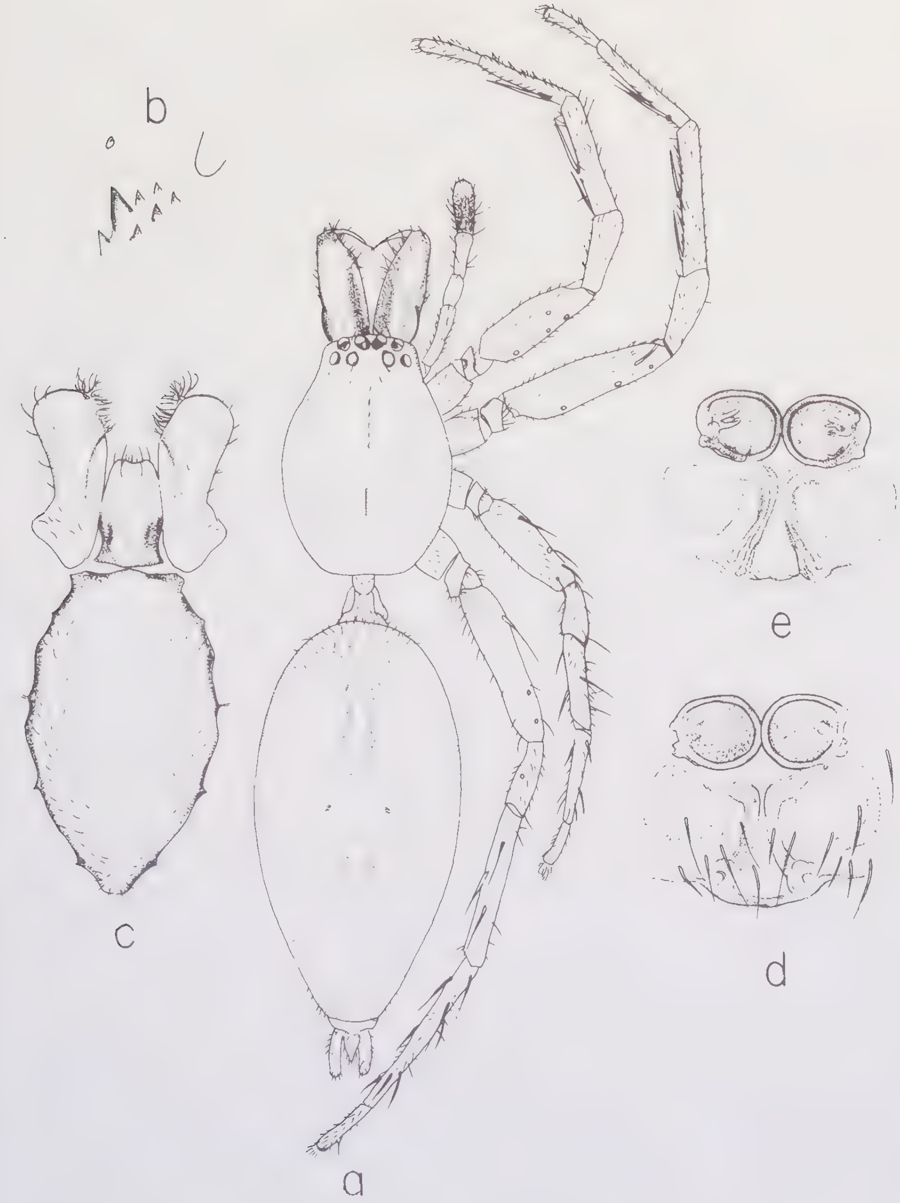

Fig. 65. Female *Clubiona victoriaensis* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

IV = 0-2-2-3, metatarsi I = II = 0-2-0-0, III = 4-4-2-1. Submedian retrolateral spine of tibia IV much closer to the posterior spine than to the anterior spine. Metatarsus I/tarsus I = 1.59. Leg formula 4213. Pedipalp as long as combined length of femora I and patella I, yellow except brownish basal two thirds of tarsi, apex of tarsi slightly cut obliquely or truncate.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.78	0.48	0.75	0.54	0.34	2.89
2	0.95	0.54	0.98	0.73	0.35	3.55
3	0.80	0.38	0.54	0.71	0.28	2.71
4	1.16	0.49	0.95	1.11	0.40	4.11
Pedipalp	0.44	0.19	0.28	–	0.35	1.26

Abdomen elongate-ovate and uniformly yellow, anterior end moderately rounded with sparse cluster of curved setae, with a pair of brown spots at the broadest midhalf, narrowed posteriorly. Posterior spinnerets more cylindrical and slender than the anterior pair and one third longer than the anal tubercle. Anterior pair twice as broad as the posterior pair basally, and bearing four pairs of long hairs dorsad of their base and posterior to the ventral subposterior transverse and circular ring. Epigynum simple, bears a pair of very small orifices on the posterior epigynal margin, separated by as much as the height of one anterior spermathecal sac, without deep cavity, scape-like process between orifices, straight to procurved, anterior pair of spermathecae moderately transversely ovate and touching each other.

Etymology: Named after the type locality.

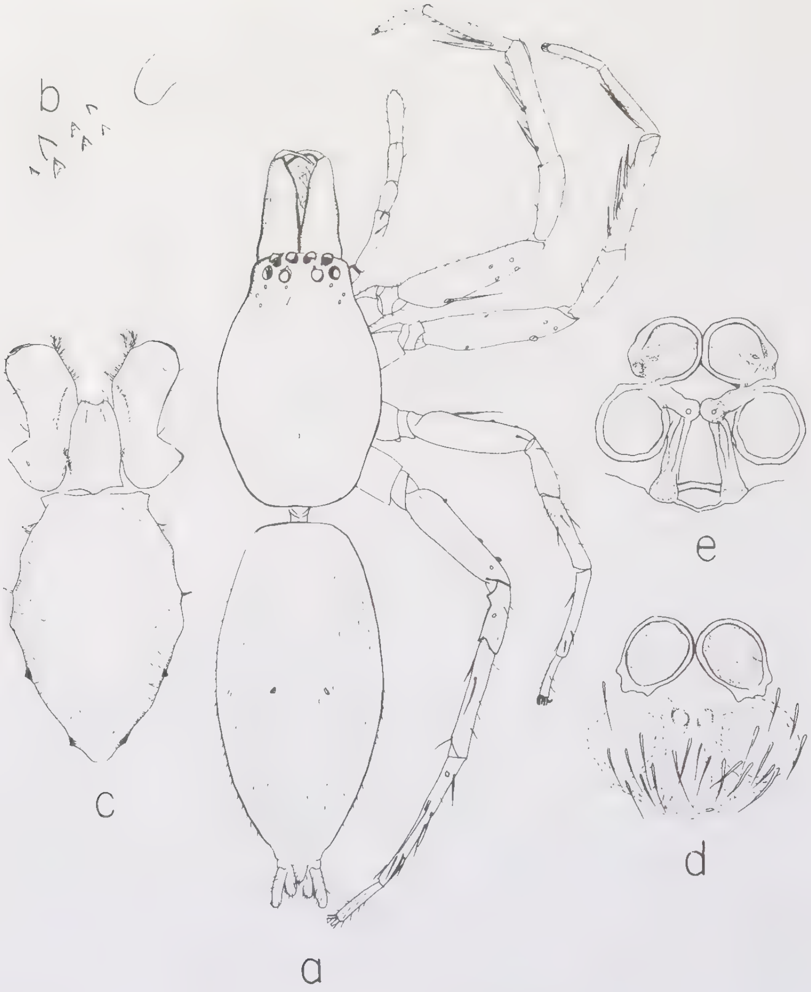

Fig. 66. Female *Clubiona dikita* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Natural history: The holotype female was collected through FARMCOP in Victoria, Laguna in July.
Material examined: PHILIPPINES; *Luzon Is.*, Laguna Prov., Victoria, Masapang Vill., holotype female, 20 July 1983, G.B. Aquino.
Distribution: Philippines.

Clubiona dikita new species
(Fig. 66a–e)

Description:
Female: Total length 4.03 mm. Cephalothorax 1.63 mm long, 1.15 mm wide, 0.63 mm high. Abdomen 2.40 mm long, 1.20 mm wide, 0.95 mm high. Cephalothorax yellow with yellowish brown to gray eye area, black eye margins, and brown longitudinal fovea. Eight eyes in two rows, AE slightly recurved and shorter (0.56 mm) than the straight PE (0.71 mm). Eye diameter (mm): AME = ALE = PME = 0.10, PLE = 0.08. Eye separation: AME–AME 0.60 eye diameter, AME–ALE = ALE–PLE as long as one half AME diameter, PME–PME twice diameter of AME, PME–PLE as long one diameter of AME. Median ocular quadrangle 1.6 times longer behind than in front, anterior width slightly shorter than length. Clypeus height very small, one third diameter of AME. Sternum yellow with yellow-brown margins, anterior margin truncate and posterior end bluntly rounded between coxae IV, longer (0.93 mm) than wide (0.60 mm). Labium and maxillae brownish yellow similar to other *Clubiona,* labium longer (0.28 mm) than wide (0.18 mm), pale yellowish along distal margins with a cleft in the middle, and marked half-length of maxillae. Inner lateral margin of maxillae with a shallow cavity and scopulae anterior to the cavity, outer lateral margin constricted at midhalf. Chelicerae same color as labium, moderately small, promargin with four teeth and retromargin with three teeth. Subbasal tooth of promargin the longest and basal tooth borne on the tip of the longitudinal ridge. Legs yellow and short, spination in femora I = II = 3-0-2-0, III = IV = 3-0-1-1; tibiae I = 0-5-0-0, II = 0-4-0-0, III = 0-2-1-1, IV = 0-2-2-2, all tibiae with two fine setae each dorsally; metatarsi I = II = 0-2-0-0, III = 5-4-1-1, IV = 5-4-2-2. Longest ventral spine in metatarsi II about 0.80 metatarsal length and 1.4 times longer than tarsi II. Metatarsus I/tarsus I = 1.52. Leg formula 4213. Pedipalp a

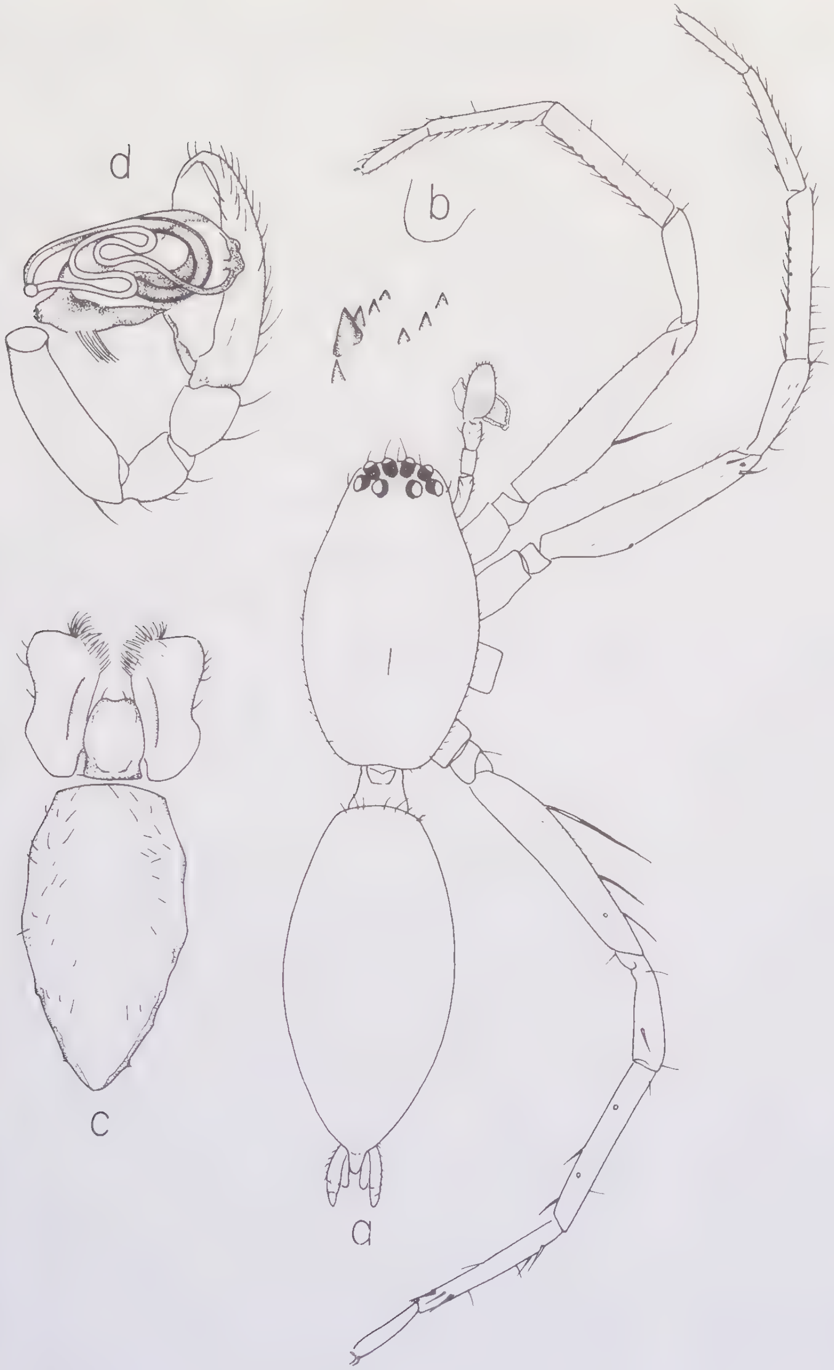

Fig. 67. Male *Clubiona unanoa* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and pedipalp (d).

little shorter than the combined length of femora I and patella I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.73	0.48	0.71	0.50	0.33	2.75
2	0.95	0.58	0.90	0.66	0.38	3.47
3	0.83	0.33	0.60	0.64	0.31	2.71
4	1.13	0.55	1.00	1.18	0.43	4.29
Pedipalp	0.41	0.19	0.25	–	0.35	1.20

Abdomen uniformly yellow dorsally, laterally, and ventrally, widest at midhalf and with a pair of small oblique brown spots dorsally, anterior end truncate with a cluster of curved setae and posterior end tapered. Posterior spinnerets more cylindrical and a little longer than the more robust anterior pair. Epigynum with contiguously oblique and converging anterior pair of spermathecae, a pair of small circular orifices right of the margin of the epigastric groove and a small tongue-like triangular slope posterior to the epigastric groove.

Etymology: Named after the converging anterior pair of spermathecae, 'dikit' in Tagalog.
Natural history: The holotype female was collected from yellow pan trap in December.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 12 December, 1984, R.F. Apostol.
Distribution: Philippines.

Clubiona unanoa new species

(Fig. 67a–d)

Description:
Male: Total length 2.35 mm. Cephalothorax 1.05 mm long, 0.60 mm wide, 0.45 mm high. Abdomen 1.30 mm long, 0.60 mm wide, 0.41 mm high. Cephalothorax pale yellow except yellow-brownish eye area and black eye rings, moderately convex, highest and broadest dorsad of coxae II–III. Eight eyes in two rows, all clear except AME, AE slightly recurved and shorter than the straight PE. Eye diameter (mm): ALE = 0.07, PME = 0.06, AME = PLE = 0.05. Eye separation: AME separated from each other by one eye diameter. AME–ALE 0.60 AME diameter, PME–PME twice AME diameter, PME–PLE as long as one AME diameter, ALE–PLE 0.80 AME diameter. Median ocular quadrangle one third wider behind than in front, anterior width slightly greater than length. Clypeus height very small, 0.60 AME diameter. Sternum yellow, subovate with a truncate anterior margin and a bluntly rounded posterior end between coxae, and nearly twice longer than wide. Labium reaches midlength of maxillae, same color as sternum and maxillae, as long as wide, constricted in the laterobasal one third. Maxillae longer than wide, constricted midlaterally on the outer side, with a cavity on the inner side opposite labium, and scopulae on top of it. Chelicerae yellow, small and with a strong serrated fang having 14–25 teeth. Promargin bears five teeth, subbasal tooth the largest. Retromargin with only three small teeth. Legs yellow and relatively short but proportional to body size. Spination in femora I = II = 3-0-1-0, IV = 3-0-0-1; tibiae I = 0-20(10 pairs)-0-0, II = 0-4-0-0, IV = 0-2-2-2; metatarsi I = 0-9(6 pairs + 3)-0-0, II = 0-1-0-0, IV = 3-3-1-3. Tarsi two-clawed, each superior claw with seven to ten teeth, claw tuft plumose and flower-bunch-like in leg IV. Leg formula 4213 (as the missing leg III is always the shortest). Pedipalp as long as combined length of femora II and patella II, retrolateral tibial apophysis callus-like, very short, blunt to slightly bifurcate at tip, palpal tibia without spines, embolus very short and high above the tegulum, tegulum longer than wide, ejaculatory duct looped, creating three cavities, basal cavity of the first loop the largest and containing the smaller second loop and the smallest third loop contained in loop 2 as seen in ventral view. Base of tegulum with a hair tuft.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.50	0.33	0.50	0.53	0.24	2.10
2	0.55	0.34	0.63	0.39	0.25	2.16
3	–	–	–	–	–	–
4	0.68	0.33	0.60	0.68	0.25	2.54
Pedipalp	0.28	0.13	0.15	–	0.33	0.89

Abdomen yellow except brownish anal tubercle, subtruncate in the anterior part, with very few erect hairs, and tapers posteriorly. Spinnerets visible dorsally, posterior pair narrower and more slender than the more robust anterior pair, anterior pair close to and parallel to each other, posterior pair parallel to each other but separated by one half length of spinnerets.
Etymology: Named after its smallness in size, 'unano' in Tagalog.
Natural history: Kerosene light trap (KLT)-collected in January.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male (without leg III and right I and II), 24 January 1985, A.T. Barrion.
Distribution: Philippines.

Clubiona krisisensis new species

(Fig. 68a–f)

Description:
Male: Total length 3.65 mm. Cephalothorax 1.60 mm long, 1.18 mm wide, 0.75 mm high. Abdomen 2.05 mm long, 1.70 mm wide, 0.88 mm high. Cephalothorax yellow with a long longitudinal brownish yellow fovea and narrow black eye rings, moderately convex and elevated along fovea. Eight eyes in two rows, all homogeneous and clear, shorter AE recurved and longer PE straight to slightly procurved. Eye diameter (mm): ALE = PME = 0.10, PLE = 0.09, AME = 0.08. Eye separation: AME–AME 1.25 eye diameter, ALE–AME one half AME diameter, PME–PME 2.25 times AME diameter, PME–PLE as long as one ALE diameter. ALE–PLE 0.6 AME or one half ALE diameter. Median ocular quadrangle 1.7 times wider behind than in front, anterior width nearly as long as length. Clypeus height very small, one third AME diameter. Sternum yellow, longer than wide, apicolaterally widened and slightly convex medially, posterior end almost truncate between coxae IV. Labium reaches midlength of maxillae, brownish yellow, similar to the maxillae, longer than wide, constricted laterally in the basal one third, anterior margin pale yellow with a slight median cleft. Maxillae longer than wide, constricted laterally at midhalf, producing a broad endite apically, inner margin with a cavity in the basal two thirds and yellow scopulae in the apical one third. Chelicerae brown-yellow, moderately small, hirsute dorsally and with scopulae anterior of promarginal row, attenuate, promargin bears four small teeth except the largest subbasal and moderately large fourth (T_4) tooth, and retromargin with four teeth. Legs relatively short,

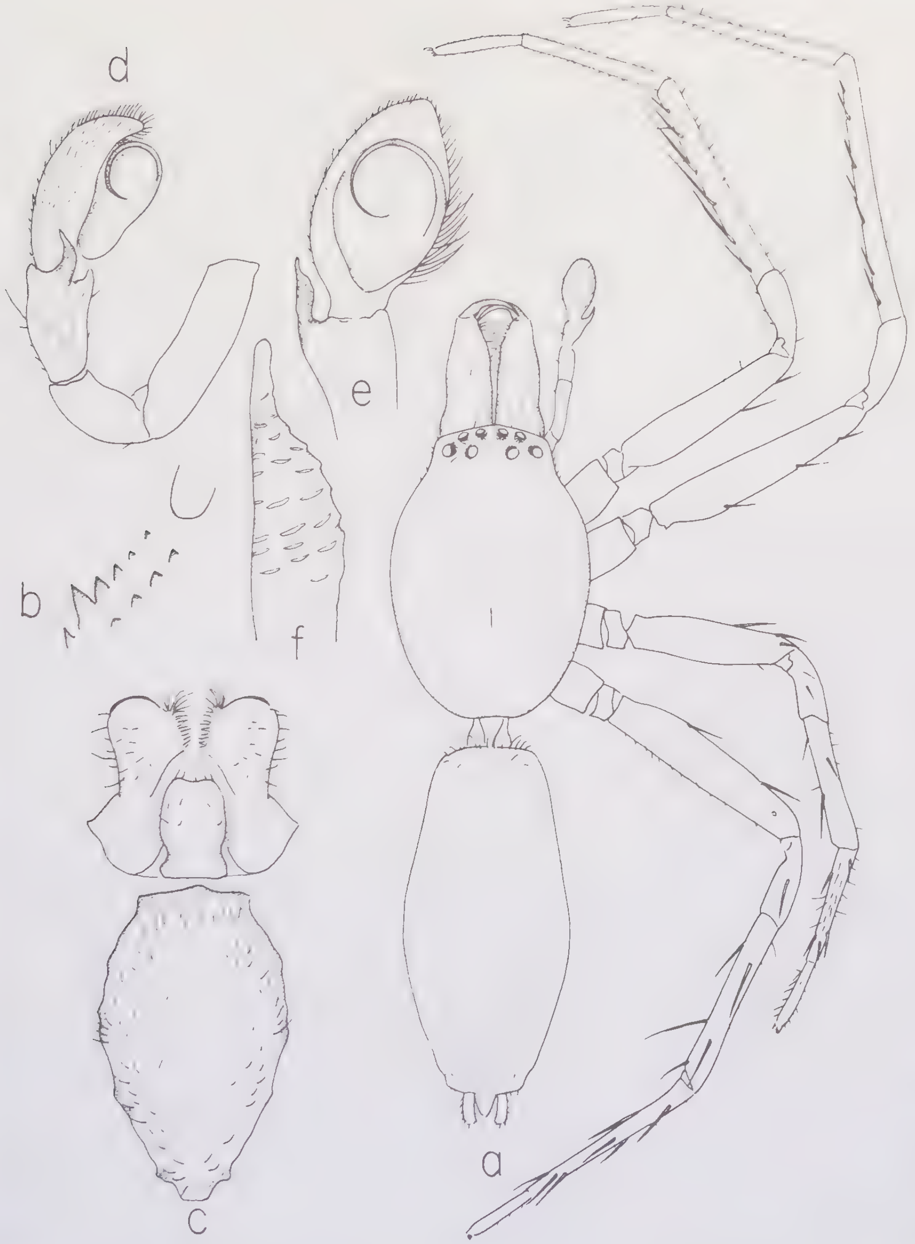

Fig. 68. Male *Clubiona krisisensis* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); lateral (d) and ventral (e) views of pedipalp; and tibial apophysis showing 'file-like' structure (f).

slender, and uniformly yellow, tarsi two-clawed, each superior claw with five teeth, claw tuft relatively sparse and plumose. Spination in femora I = II = 3-0-1-0, III = 2-0-1-1, IV = 3-0-1-1; tibiae I = II = 0-12(6 pairs)-0-0, III = 0-2-1-1, IV = 0-3-2-2; metatarsi I = II = 0-0-0-0, III = 4-4-1-1, IV = 2/3-3-3-3. Metatarsus I/tarsus I = 1.71. Metatarsi IV with the longest subapicodorsal trichobothria, ca. one third of metatarsal length. Tarsi IV with a pair of longest dorsal trichobothria in the apical one third of its length. Leg formula 4213. Pedipalp almost as long as femora II, retrolateral tibial apophysis broadly truncated on one side and forms a weak sickle-shaped narrow curve on the other side, cymbium half-circular, tegulum ovoid posteriorly with embolus arising on its side, circling the anterior one half of cymbium, and moderately curved inwards in line with its base or origin.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.95	0.50	1.15	0.60	0.35	3.55
2	1.28	0.60	1.38	0.83	0.45	4.54
3	0.95	0.39	0.78	0.80	0.33	3.25
4	1.35	0.50	1.13	1.30	0.40	4.68
Pedipalp	0.45	0.23	0.20	–	0.39	1.27

Abdomen hirsute and yellow, truncated at the hairy anterior end and tapering posteriorly. Spinnerets visible dorsally, posterior pair almost as long as the anterior pair, and all pairs parallel to each other. Posteroventral tip of abdomen with a circular ring of hairs anterior of the spinnerets.

Etymology: Named after oil crisis ('krisis' in Tagalog) situation in the Philippines coinciding with the species description.

Natural history: A single male collected by KLT in summer of April.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 24 April 1985, A.T. Barrion.

Distribution: Philippines.

Clubiona katioryza new species

(Fig. 69a–e)

Description:

Male: Total length 4.63 mm. Cephalothorax 1.88 mm long, 1.53 mm wide, 0.85 mm high. Abdomen 2.75 mm long, 1.00 mm wide, 1.03 mm high. Cephalothorax yellow except brownish eye area and black eye rings. Cephalic area with a V-shaped formation of 14 setae from laterals of PLE to brown longitudinal fovea and enclosing 11 more scattered setae in its widest part, posterior to PE. Eight eyes in two rows, AE recurved and shorter (0.70 mm) than the slightly procurved PE (0.90 mm). Eye diameter (mm): ALE = 0.14, PME = 0.13, PLE = 0.12, AME = 0.11. Eye separation: AME–AME as long as one eye diameter, AME–ALE one half diameter of AME, PME–PME 2.55 times diameter of AME, PME–PLE longer than one AME diameter and as long as diameter of one PME, ALE–PLE one half AME diameter. Median ocular quadrangle 1.5 times wider behind than in front (0.33 mm), anterior width and length equal. Clypeus height small, barely one third diameter of AME. Sternum yellow and rebordered moderately, longer than wide, anterior end truncate with a small flange laterally, lateral margins opposite coxae II and III with shallow indentions, posterior end narrowly truncate, median area with short fine hairs much shorter than those in the margins. Labium brown similar to chelicerae, one third longer than wide with lateral constriction in basal one third, pale yellow distal end cleft medially and barely reaching midlength of maxillae. Outer lateral margins of maxillae concave at midhalf, inner lateral margin with a shallow cavity and scopulae in its anterior one third. Chelicerae moderately robust and strong, attenuate, with a prominent longitudinal ridge and a deep cavity anterior of the ridge, bulbous and hirsute to rough frontally, and with a transverse constriction laterally anterior to the boss. Promargin with two teeth, the large apical tooth almost in line with promarginal scopulae and the small basal tooth well below the large apical and situated towards the cavity opposite the tip of the longitudinal ridge. Two teeth in between promargin and retromargin. Retromargin bears three small teeth (two teeth in paratype), posterior to the two small teeth in between. Legs yellow and moderately long. Spination in femora I = 3-0-1-1, II = 3-0-2-3, III = 3-0-2-2, IV = 3-0-1-1; tibia I = II = 0-4-0-0, III = 2-3-1-2, IV = 2-3-2-2; metatarsi I = II = 0-2-0-0, III = 5-4-2-1, IV = 5-4-2-2. Tibia II with a large modified ventral spine in the apical fourth and a small blunt tooth midway between tip of tibia and base of large spine. Metatarsi II slightly bent in the basal one fourth, with a pair of small humps and long ventral spines emanating from each hump, outer ventral spine much longer than the inner one and longer than midlength of metatarsi. Metatarsus I/tarsus I = 1.89. Tarsi two-clawed, each claw with seven or more teeth. Claw tuft with relatively sparse plumose hairs. Leg formula 4213. Pedipalp longer than tibia II, tibia longer than patella, broadest distally and narrower basally, with a short bent thumb-like retrolateral tibial apophysis. Cymbium with a very short embolus near tip of conductor, ejaculatory duct curved C-shaped in midarea of cymbium, then looping posteriorly and anteriorly retrolaterally to the side of conductor.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.13	0.68	1.15	0.85	0.45	4.26
2	1.58	0.84	1.60	1.18	0.58	5.78
3	1.08	0.53	0.80	0.98	0.31	3.70
4	1.62	0.60	1.48	1.80	0.50	6.00
Pedipalp	0.63	0.28	0.33	–	0.45	1.69

Abdomen yellow, anterior end broadest and bears a moderately thick cluster of curved setae, slightly raised in the apical one half and shallowly concave in the tapering posterior one half. Median longitudinal area of dorsum with a broad dark yellow band and a narrow transparent to pale yellow longitudinal band on each lateral side, subposteriorly with a transverse circular ring anterior to the spinnerets (anterior and posterior). Posterior spinnerets as long as the anterior and converging apically. Anterior pair more robust than the posterior pair, parallel and close to each basally.

Etymology: Named after the host, upland rice, in Tagalog combined with the rice genus *Oryza*. 'Kati' means upland/dry area.

Natural history: Two males were separately collected from slash-and-burn upland rice in September.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 20 September 1984, A.T. Barrion and R. Apostol; Laguna Prov., Siniloan, Magsaysay Vill., paratype male, 26 September 1984, R. Apostol and M. Perez.

Distribution: Philippines.

Clubiona paranghinlalakirta new species

(Fig. 70a–d)

Description:

Male: Total length 4.78 mm. Cephalothorax 1.85 mm long, 1.48 mm wide, 0.95 mm high. Abdomen 2.93 mm long, 1.03 mm wide, 1.13 mm high. Cephalothorax sim-

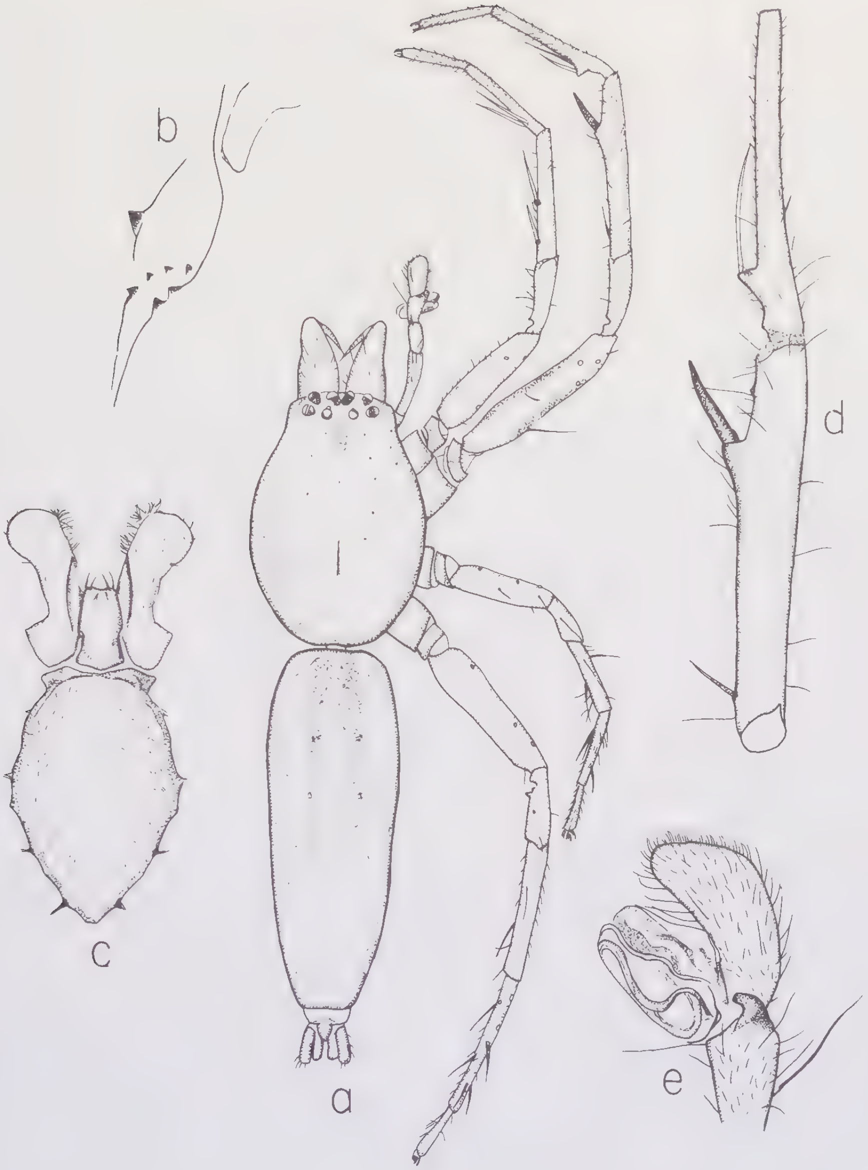

Fig. 69. Male *Clubiona katioryza* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); tibia II and metatarsus II (d); and ventrolateral view of pedipalp (e).

ilar to *C. topakea* in color pattern except for a longer and more brown fovea, anterior of fovea with a pair of setae, cephalic area with 22 setae arranged in six transverse rows from fovea to posterior of PME in the pattern of 2-2-2-8-4-4. Eight eyes in two rows, all clear except dark AME. AE row slightly recurved and shorter (0.70 mm) than slightly procurved PE row (0.90 mm). Eye diameter (mm): ALE = 0.13 mm, AME = PME = PLE = 0.10. Eye separation: AME–AME as long as one eye diameter, ALE–PLE one half AME diameter. Median ocular quadrangle prominently wider behind (0.45 mm) than in front (0.30 mm), anterior width slightly longer than length. Clypeus height very small, hardly one third of AME diameter. Sternum yellow and rebordered brown, anterior margin concave, posterior end blunt to subtruncate. Labium brownish red, similar to maxillae, except pale yellow distal end with moderately cleft median, constricted laterally in the posterior one third and beyond midlength of maxillae. Maxillae longer than wide, similar to the labium, inner margin with a cavity and scopulae anterior to it, outer lateral margin constricted in the basal one third and subglobular apically. Chelicerae moderately robust, attenuate, promargin bears two teeth, with the apical tooth larger than the basal. Retromargin with three small teeth, basal two close to each other and relatively isolated apical one. In between two rows of teeth is a single tooth. Scopulae anterior to the apical tooth extended to base of fang. Legs moderately long and slender, yellow except brownish tibial and metatarsal joints. Spination in femora I = 3-0-1-2, II = 3-0-2-1, III = 3-0-2-2, IV = 3-0-1-1; tibiae I = II = 0-4-0-0, III = 0-3-1-1, IV = 0-3-2-2, dorsum of tibiae III

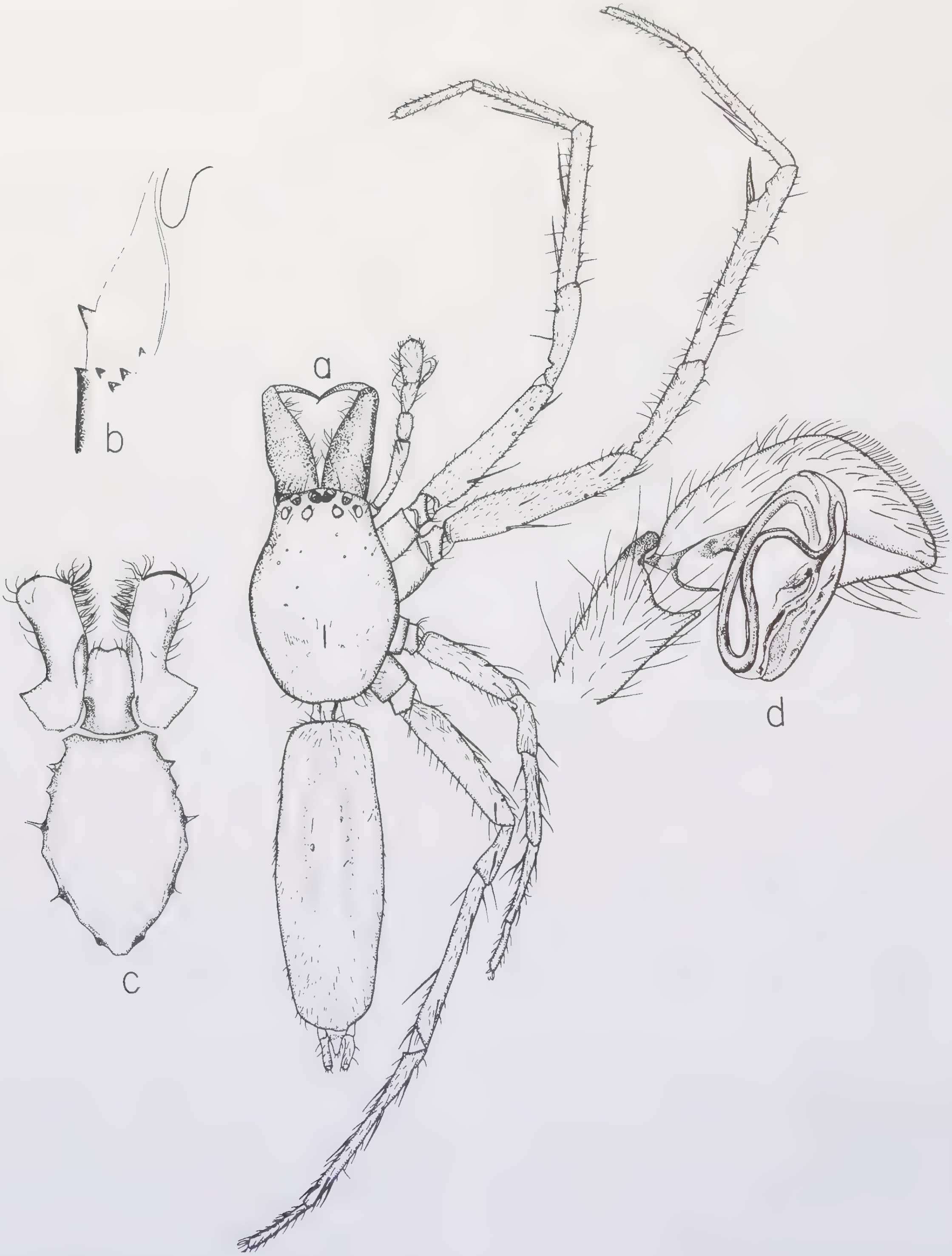

Fig. 70. Male *Clubiona paranghinlalakirta* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and pedipalp (d).

and IV each with two thin setae; metatarsi I = II = 0-2-0-0, III = 3-4-2-2, IV = 5-4-2-2. Ventroapical one fourth of tibiae II with a large spine and a small subapicoventral tooth anterior to it. Metatarsus I/tarsus I = 1.85. Tarsi two-clawed, each claw with at least one tooth. Claw tuft, with plumose hairs and moderately clubbed. Leg formula 4213. Pedipalp almost as long as tibia II, tibia with a pair of long bristles subapically, near each other on the dorsoprolateral side, and a single dorsal bristle a little below midhalf. Retrolateral tibial apophysis shorter than diameter of tibia, short and like an angulatory bent thumb. Cymbium longer than wide, moderately convex with six macrosetae, embolus very short dorsad of the membranous apical part of tegulum, ejaculatory duct with one posterior loop, becoming C-shaped in the middle, touching the straight part of the loop on the lateral edge of the cymbium.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.13	0.65	1.13	0.85	0.46	4.22
2	1.48	0.83	1.55	1.10	0.50	5.46
3	1.10	0.50	0.85	0.98	0.38	3.81
4	0.58	0.70	1.45	1.43	0.50	5.66
Pedipalp	0.60	0.23	0.28	–	0.45	1.56

Abdomen uniformly yellow, clothed with short light brown hairs, anterior end truncate and with a moderately thick row of curved setae, median area with paired long brown hairs in two longitudinal rows in the apical one third, more in the middle, and scattered in the posterior one third anterior to the spinnerets. Posterior spinnerets yellow as long as the anterior pair, more slender and smaller in diameter than the yellow brown anterior spinnerets. Bases of spinnerets circled with a transverse row of long hairs after the membranous area.

Etymology: A combination of RTA (retrolateral tibial apophysis) and its shape (in Tagalog thumb-like = 'parang hinlalaki').

Natural history: One male (holotype) was handpicked from *Echinochloa* weed in irrigated rice in October and three paratypes were collected from yellow pan traps in October.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Villanueva, Kalilangan-Villanueva Vill., holotype male, 8 October 1985, A.T. Barrion, Claveria, Kalilangan Vill., three male paratypes, same data as holotype.

Distribution: Philippines.

Clubiona venusae new species
(Fig. 71a–g)

Description:

Male: Total length 4.73 mm. Cephalothorax 1.88 mm long, 1.50 mm wide, 0.65 mm high. Abdomen 2.85 mm long, 1.05 mm wide, 0.83 mm high. Cephalothorax yellow with yellow-brown eye area, black eye rings, and short brown fovea, widest dorsad of coxae II and III, and bearing seven transverse row of long hairs from posterior of PE row to anterior of fovea in the pattern 4-2-2-2-2-2. Eight eyes in two rows, slightly recurved AE shorter (0.55 mm) than slightly procurved PE (0.73 mm). Eye diameter (mm): ALE = 0.13, AME = PME = 0.11, PLE = 0.09. Eye separation: AME–AME one half eye diameter, ALE–PLE = AME–AME. Median ocular quadrangle much broader behind (0.43 mm) than in front (0.26 mm), anterior width shorter than length (0.30 mm). Clypeus height small, as long as one third of AME diameter. Sternum yellow, longer than wide, truncated anterior margin expanded laterally, laterals as in other *Clubiona*, median area with short hairs, much shorter than those towards the lateral margins, posterior end blunt between coxae IV. Labium longer than wide, brownish yellow, constricted below midlaterals, apical end yellowish with a shallow cleft in the middle, reaches midlength of maxillae. Maxillae yellow, constricted midlaterally on the outer side and with a shallow cavity on the inner side, scopulae on the inner apicolateral one third. Chelicerae yellow-brown and moderately strong. Promargin with four teeth and scopulae dorsad of teeth, subbasal tooth the largest. Retromargin with five very minute teeth. Legs relatively long and slender, yellow except brown tarsi, metatarsi, and apical part of tibiae in legs I and II. Spination in all femora I to IV = 3-0-1-1; tibiae I = II = 0-5-0-0, III = 2-2-2-2, IV = 1-3-2-2; metatarsi I = II = 0-0-0-0, III = 3-4-3-2, IV = 2-5-4-4. Tibia II with a large ventral spine in apical one fifth, extended to the distal end, passing small subapical nipple-like teeth. Metatarsi II with a slight bend in the basal one fourth opposite tip of modified tibial spine. Metatarsus I/tarsus I = 2.84. Tarsi two-clawed, each claw with at least seven teeth. Claw tuft clubbed. Leg formula 4213. Pedipalp as long as combined length of patella I and femora I, retrolateral tibial apophysis subangulate, long, slender, and razor-blade-like, tibia with a pair of subapicoprolateral and a pair of subbasoprolateral setae. Cymbium small, almost twice longer than wide, moderately truncate apically, embolus moderately short, originating from apical one fourth of length of cymbium, extended to the apical border of the light yellow and partly swollen conductor, ejaculatory duct forms one loop and is strongly footprint-like, broadened in the anterior and narrowly rounded posteriorly.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.68	0.88	1.58	1.25	0.44	5.83
2	1.90	0.93	1.90	1.15	0.58	6.46
3	1.15	0.60	0.93	1.05	0.33	4.06
4	1.95	0.83	1.93	2.35	0.58	7.64
Pedipalp	0.63	0.30	0.28	–	0.53	1.74

Abdomen yellow with a broad median longitudinal brownish yellow band containing nine pairs of setae arranged in two longitudinal rows, anterior and truncated with a dense cluster of curved setae, narrowed posteriorly and widest at midlength. Posterior spinnerets

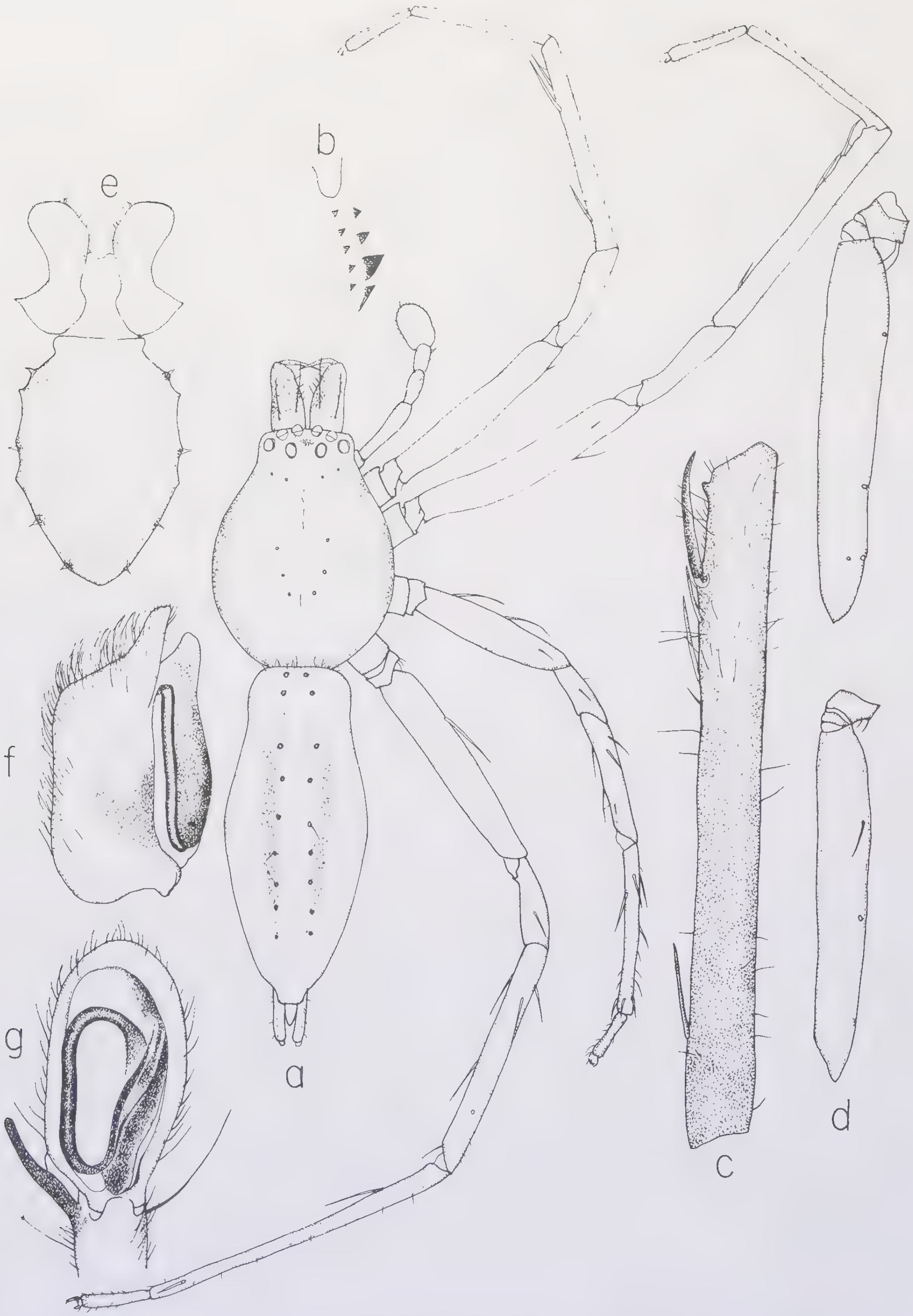

Fig. 71. Male *Clubiona venusae* n. sp. (a); cheliceral teeth (b); tibial modified spine (c); femora IV (top) and II (bottom) (d); sternum, labium, and maxillae (e); and lateral (f) and ventral (g) views of pedipalp.

a little shorter than the anterior, and subparallel to each other, anterior pair more robust than the posterior.

Etymology: Dedicated to my co-adviser and professor, Dr Venus J. Calilung, an aphidologist and former Director of the UPLB Museum of Natural History.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 16 January 1985, A.T. Barrion; paratype male, 30 January 1985, A.T. Barrion.

Distribution: Philippines.

Clubiona maysangarta new species

(Fig. 72a–f)

Description:

Male: Total length 6.70 mm. Cephalothorax 2.50 mm long, 1.95 mm wide, 0.88 mm high. Abdomen 4.20 mm long, 1.40 mm wide, 1.08 mm high. Cephalothorax pale yellow-brown, darker in the eye area, and black in the eye rings. Cephalic area with seven pairs of transversely arranged setae in the pattern 4-4-2-2-2-2-2, from posterior of PE to anterior of the brown longitudinal fovea. Eight eyes in two rows, AE slightly recurved and shorter than the procurved PE. Eye diameter (mm): ALE = 0.15, AME = PME = PLE = 0.13. Eye separation: AME = AME = 0.60 eye diameter, AME–ALE as long as AME separation, PME–PME 1.85 times diameter of AME, PME–PLE as long as one AME diameter. PLE–ALE 0.60 times diameter of AME. Median ocular quadrangle 1.70 times broader behind than in front, length 1.20 times longer than anterior width (0.30 mm). Clypeus height 0.40 AME diameter. Sternum and maxillae similar to *C. unikarta* n. sp., longer (1.30 mm) than wide (0.88 mm). Labium 0.60 longer than wide, distal end slightly cleft in the middle, about 0.60 length of maxillae. Chelicerae moderately robust, attenuate apically on the inner side, with long hairs frontodorsally and scopulae in the promargin. Retromargin with five small teeth and four teeth in the promargin, subbasal tooth of promargin large and the basal promarginal tooth dorsad of the longitudinal ridge. Legs yellow-brown, brownish in the apical three fourths of tibia, metatarsi, and tarsi of legs I and II. Spination in femora I = 3-0-1-2, II = 3-0-3-3, III = 3-0-2-2, IV = 3-0-1-1; tibiae I = 0-5-0-0, II = 0-6-0-0, III = 4-3-1-1, IV = 0-3-2-2, each tibia with subapical and subbasal dorsal thin setae, and tibia II with a modified ventral spine subapically and a small tooth after it before the apex; metatarsi II slightly curved, metatarsi I = II = 0-0-0-0, III = IV = 6-4-1-2. Metatarsus I/tarsus I = 2.06. Tibiae, metatarsi, and tarsi typical of other newly described *Clubiona*, ringed with moderately long and erect hairs and dorsal trichobothria on tarsi, apicodorsal part of tarsi III and IV with a small cluster of long plumose setae. Tarsi two-clawed, each claw with at least 15 teeth, claw tuft moderately sparse and shorter than claw in legs I and II but denser and longer than claw in legs III and IV. Leg formula 4213. Pedipalp as long as combined length of metatarsus III and tarsus III but a little shorter than tibia I, tibiae with a pair each of long subapical and submedian prolateral setae. Retrolateral tibial apophysis shorter than tibial diameter, ratio of RTA length/tibial diameter at greatest width = 0.72, ratio of tibial length/tibial diameter = 2.17, flat and shoe-shaped in lateral view, thumb-like with a minute pointed tip, with longitudinal striae basally towards a basal spur in retrolateral view, ventral apophysis short and truncated apically. Cymbium longer than wide and subglobular, with oblongate tegulum, ejaculatory duct around the margins of cymbium orifice, embolus very short and fine, partly behind the membranous conductor towards apex of cymbium. Ratio of tegulum height/cymbium height 0.78, ratio of cymbium height/cymbium retrolateral width = 2.42.

Length of pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.40	1.25	2.35	1.55	0.75	8.30
2	2.60	1.40	2.90	2.00	0.85	9.75
3	1.85	0.85	1.50	1.80	0.50	6.50
4	3.10	1.10	2.80	3.60	0.85	11.45
Pedipalp	0.90	0.45	0.50	–	0.70	2.55

Abdomen prominently longer than wide, yellow, with a broad yellow-brown scutum-like banned in the apicodorsal two thirds of its length, truncate apically with a dense cluster of curved setae and tapering posteriorly. Posterior spinnerets diverging, separated by 0.60 its length, more slender and a little longer than the stouter and similarly diverging anterior spinnerets. Dorsad of the anterior pair of spinnerets is a yellow hairless area and a transverse half-circular ring of sparsely set setae.

Etymology: Combination of the character of tibial apophysis ('maysanga' in Tagalog meaning with a branch) and RTA, retrolateral tibial apophysis.

Natural history: A single male without right leg IV was collected from a kerosene light trap (in March) set between a secondary dipterocarp forest and 500 m^2 plot previously planted to slash-and-burn upland rice.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 6 March 1985, R. Apostol and A.T. Barrion.

Distribution: Philippines.

Clubiona hugispaa new species

(Fig. 73a–f)

Description:

Male: Total length 5.10 mm. Cephalothorax 2.10 mm long, 1.50 mm wide, 0.96 mm high. Abdomen 3.00 mm long, 1.00 mm wide, 0.88 mm high. Cephalothorax brownish yellow except black eye margins and dark brown longitudinal fovea. Cephalic more yellowish than the more elevated thoracic area. Eight eyes all clear except AME and in two rows, AE moderately recurved and PE straight to slightly procurved. Eye diameter

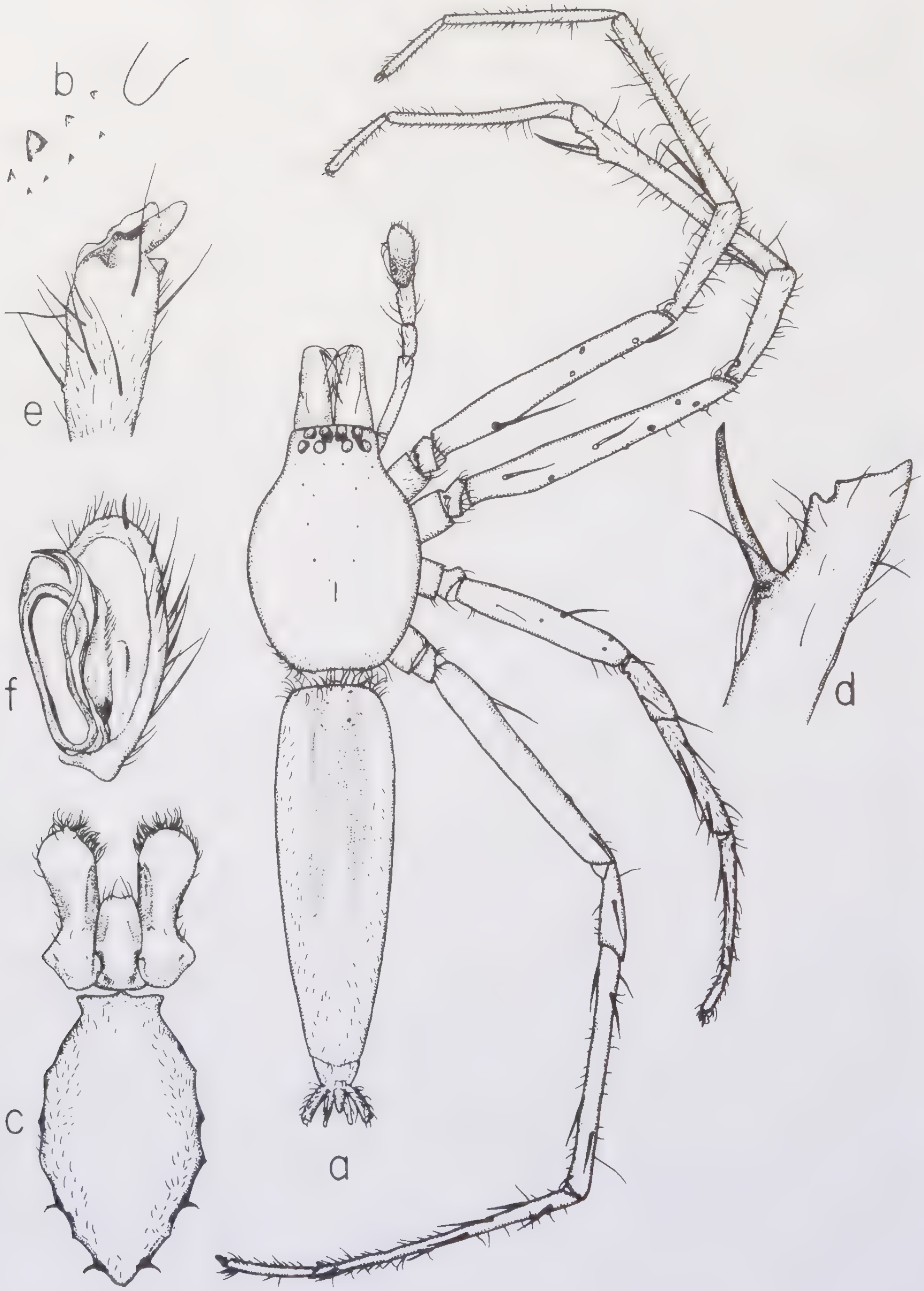

Fig. 72. Male *Clubiona maysangarta* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); modified spine of tibia II (d); retrolateral tibial apophysis (e); and cymbium (f).

(mm): ALE = 0.14, PME = 0.13, PLE = 0.11, AME = 0.10. Eye separation: AME–AME 0.8 eye diameter, ALE–AME one half AME diameter, PME–PME 2.3 times AME diameter, PME–PLE 1.4 times AME diameter. Median ocular quadrangle one third wider behind than in front, anterior about as long as length. Clypeus height very small, 0.4 AME diameter. Sternum yellowish brown, subovate, lateral edges bear spine-like structures opposite each coxa, anterior margin truncate, with a length equal to one third of sternum length, and subapically constricted, posterior end blunt. Labium reaches above midlength of maxillae, brownish yellow, longer than wide, constricted laterally below midlength and anterior margin cleft moderately in the middle. Maxillae yellow-brown, longer than wide, expanded on both ends by the strongly concave midprolateral edge. Retromargin with a groove and scopulae present anterior to the retromargin. Chelicerae red-brown, moderately small, promargin bears four teeth, the largest being the subbasal tooth, retromargin with four very

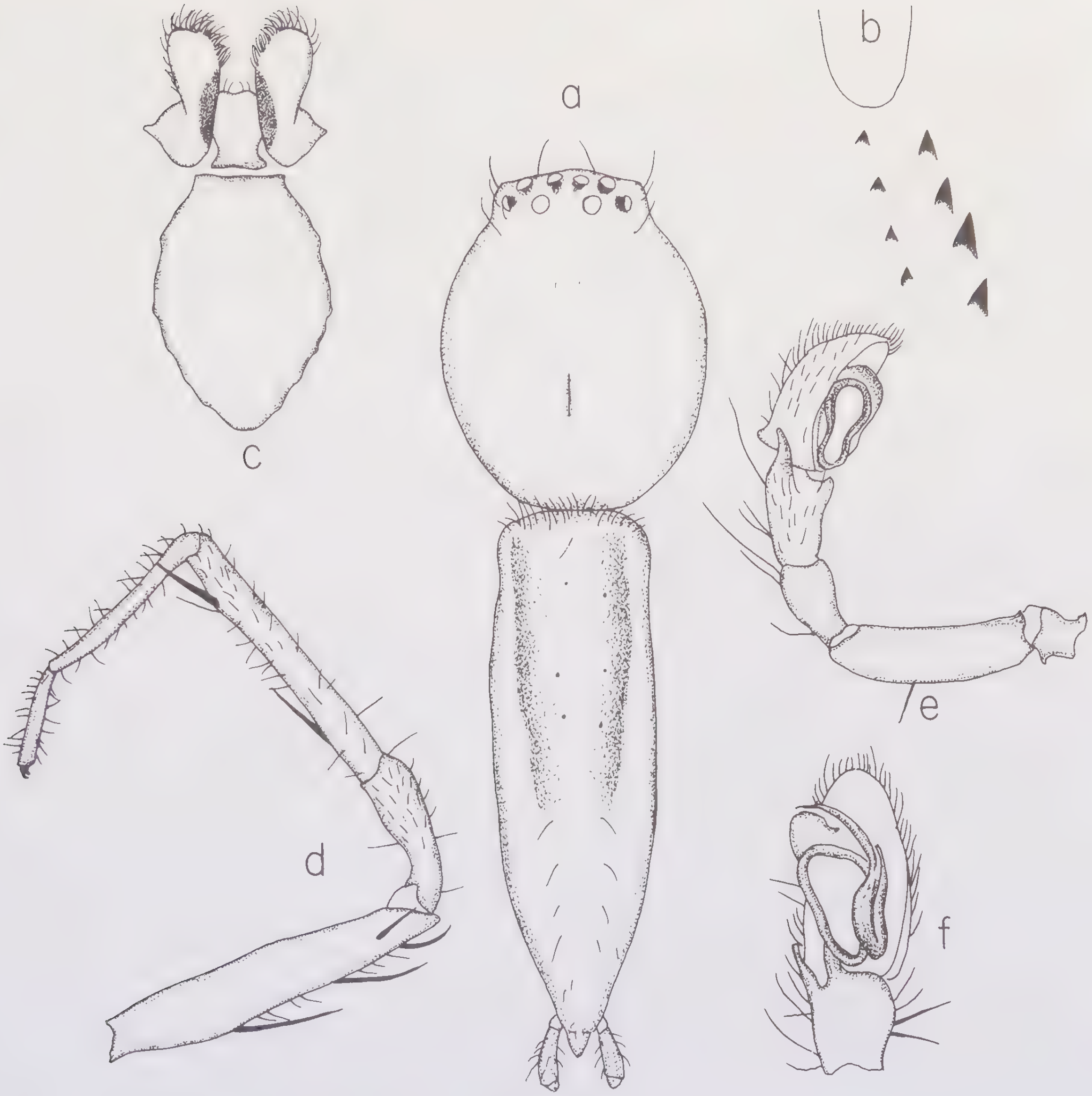

Fig. 73. Male *Clubiona hugispaa* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); leg II (d); pedipalp (e); and ventral view of cymbium and tibia (f).

minute teeth. Legs moderately long and slender, uniformly yellow with brown spines and tarsal claws. Spination in femora I = 3-0-1-0, II = III = IV = 3-0-1-1; tibia I = II = 0-5-0-0, III = 2-2-2-2, IV = 2-3-3-2. Tibia II with a large ventrolateral spine. Metatarsi I and II spineless. Metatarsus I/tarsus I = 2.12. Tarsi two-clawed with thick claw tuft. Leg formula 4213. Pedipalp a little shorter than tibia II but longer than tibia IV, retrolateral tibial apophysis attenuated and curved outward in the apical one third, ventral apophysis short but broadly subtruncate at apex, ejaculatory duct footprint-like, with a broad anterior and narrow posterior.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.68	0.93	1.50	1.18	0.56	5.85
2	2.00	1.08	1.95	1.45	0.63	7.11
3	1.28	0.60	0.93	1.15	0.38	4.34
4	2.13	0.90	1.75	2.30	0.53	7.61
Pedipalp	0.70	0.30	0.30	–	0.55	1.85

Abdomen elongate, yellow with a broad yellow-brown median band lined with a pair of small and slender setae arranged in two longitudinal rows. Anterior margin hirsute and almost truncate. Spinnerets distinct dorsally, and tubercle moderately long and about one half length of posterior pair of spinnerets. Anterior spinnerets stouter than the anterior pair.

Etymology: Named after the shape of the ejaculatory duct.

Natural history: Two males were collected from kerosene light traps in January.

Material examined: **PHILIPPINES:** *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 16 January 1985, A.T. Barrion, paratype male, same locality, 30 January 1985, A.T. Barrion.

Distribution: Philippines.

Clubiona leonilae new species

(Fig. 74a–d)

Description:

Male: Total length 5.69 mm. Cephalothorax 2.26 mm long, 1.63 mm wide, 1.43 mm high. Abdomen 3.43 mm long, 1.13 mm wide, 1.20 mm high. Cephalothorax yellow with brown eye area, fovea, and black eye margins, alternate cephalic with subparallel laterals, thoracic area widest dorsad of coxae III and clothed with fine short brown hairs. Eight eyes in two rows, recurved AE shorter (0.63 mm) than the straight PE (0.78). Eye diameter (mm): ALE = 0.14, AME = 0.13, PME = PLE = 0.10. Eye separation: AE equally spaced, 0.40 AME diameter, PME–PME twice diameter of PME or 1.5 times AME diameter, PME–PLE as long as one diameter either PME or PLE, ALE–PLE 0.40 times diameter of AME. Median ocular quadrangle 0.7 times broader behind than in front, anterior width and length equal. Clypeus height small and basically one third diameter of AME. Sternum yellow, longer than wide, apical margins extended laterally, and midportion with an elevation, median area with fewer and shorter hairs than the lateral area, posterior end blunt to slightly truncate. Labium yellow-brown similar to maxillae, 0.60 times longer than wide, and as long as 0.60 height of maxillae, apical margin cleft in the middle. Maxillae constricted at midhalf in the outer lateral margin, with a cavity in the inner margin and scopulae dorsad of the cavity. Chelicerae moderately robust subapically bulbous in front and with a distinct boss. Promargin and retromargin each with four teeth, subbasal tooth of promargin large and its basal small tooth at the tip of the longitudinal ridge. Legs yellow except yellow-brown apical one half of tibiae, entire metatarsi and tarsi of legs I and II, and moderately long and slender. Spination in femora I = 3-0-1-3, II = 3-0-3-3, III = 3-0-2-2, IV = 3-0-1-2; tibia I = II = 0-5-0-0; III = IV = 0-3-2-2; metatarsi I = II = 0-0-0-0, III = 5-4-2-1, IV = 5-5-2-1. Tibia II with a modified long subapicoventral spine. Metatarsi II normal without curvatures. Metatarsus I/tarsus I = 1.93. Tarsi two-clawed, each claw with 11–14 teeth, claw tuft denser in legs III and IV than in I and II and clubbed at the tip. Leg formula 4213. Pedipalp a little longer than combined length of metatarsus I and tarsus I, tibia with long and short subapicoprolateral setae and and a long submedian one. Retrolateral tibial apophyses flat and thumb-like with a basal cavity forming a small blunt outgrowth, posterior one third of RTA slightly swollen and with J-shaped stria, apex strongly rounded, as long as diameter of tibia, ratio of tibial length/diameter = 2.45. Cymbium small and subglobular, longer (0.68 mm) than wide (0.28 mm), height of tegulum = 0.53 mm. Relatively close to *C. maysangarta*. Ejaculatory duct less angulately curved but more obliquely curved towards the apex of the near side of embolus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.95	1.00	1.60	1.35	0.70	6.60
2	2.20	1.03	2.25	1.70	0.75	7.93
3	1.45	0.65	1.10	1.50	0.55	5.25
4	2.45	0.93	2.25	2.88	0.73	9.24
Pedipalp	0.73	0.35	0.38	–	0.65	2.11

Abdomen yellow, three times longer than wide, anterior end truncately broad with a dense cluster of curved setae, apicodorsal 0.60 of abdominal length with a light brown scutum-like band and a 9–11 pairs of longitudinally arranged brown setae extended up to the tapering posterior abdominal end. Venter and laterals of the abdomen yellow clothed with short fine hairs similar to the dorsum. Subposteroventral with a transverse half-circular ring. All spinnerets parallel to each other, anterior pair a little longer and prominently stouter than the posterior pair. Anal tubercle long, subtriangular to conical, about one half length of posterior spinnerets.

Etymology: Dedicated to the senior author's teacher and adviser Dr Leonila C. Raros, for her support and encouragement in the author's early career in entomology.

Natural history: A single male was isolated from the yellow pan trap catch in December.

Material examined: **PHILIPPINES:** *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 12 December 1984, A.T. Barrion and M. Perez.

Distribution: Philippines.

Clubiona zandstrai new species

(Fig. 75a–d)

Description:

Male: Total length 3.43 mm. Cephalothorax 1.50 mm long, 1.13 mm wide, 0.88 mm high. Abdomen 1.93 mm long, 0.98 mm wide, 1.05 mm high. Cephalothorax yellow except yellow-brown eye area and black eye rings, broadest dorsad of coxae II and III, thoracic area slightly higher than cephalic just posterior of the brown longitudinal fovea. Eight eyes in two rows, AE slightly recurved and shorter than the procurved PE. Eye diameter (mm): ALE = 0.13, PME = 0.11, PLE = 0.10, AME = 0.08. Eye separation: AME–AME slightly longer than one half of eye diameter. AME–ALE 0.30

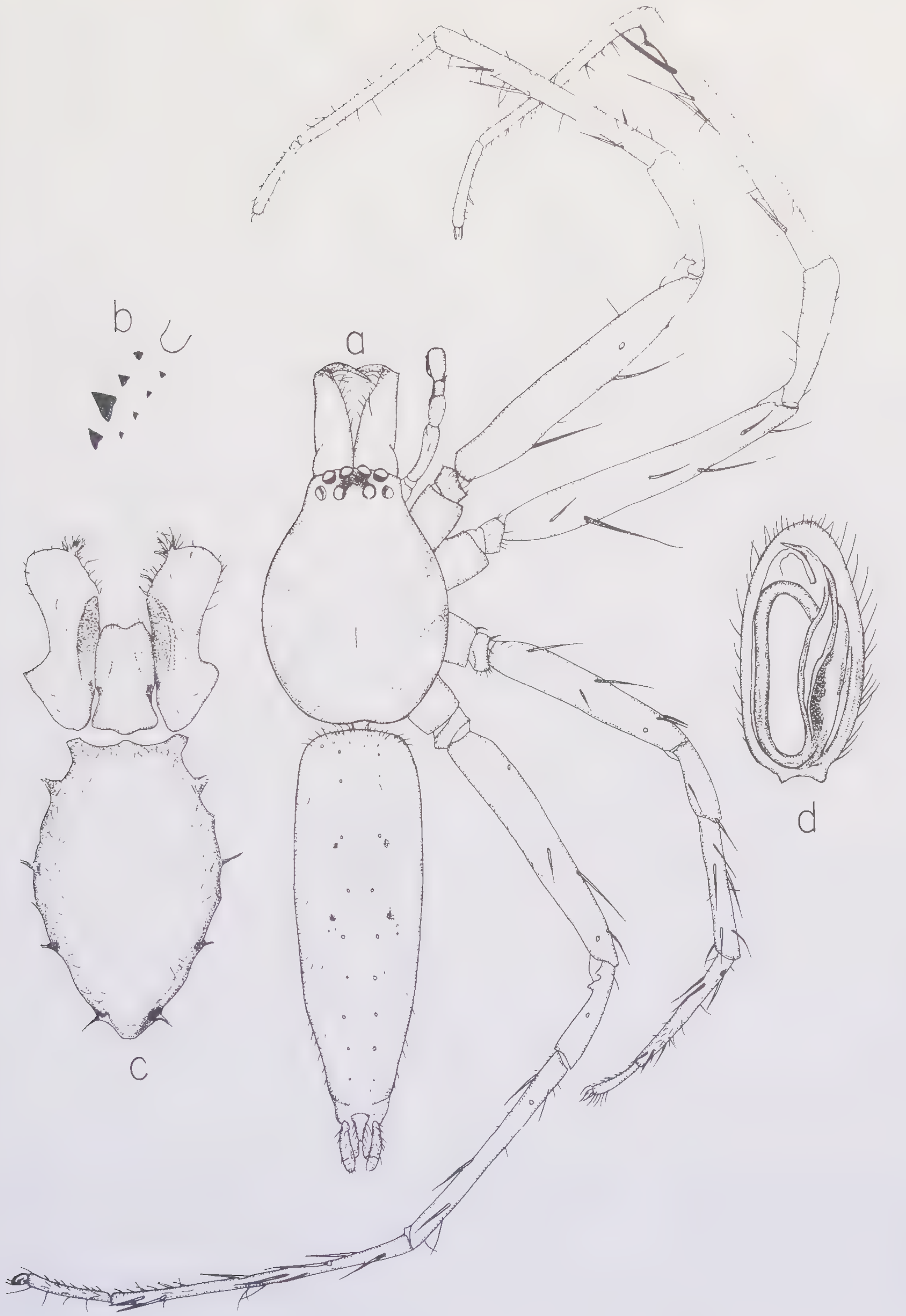

Fig. 74. male *Clubiona leonilae* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of palp (d).

AME diameter, PME–PME almost twice AME diameter, PME–PLE as long as diameter of AME, ALE–PLE about one third AME diameter. Median ocular quadrangle 1.66 times wider behind than in front and posterior width 1.4 times wider than length. Clypeus height small, one half AME diameter. Sternum yellow, longer (0.85 mm) than wide (0.68 mm), anterior margin truncated without an apicolateral flange, posterior end blunt between coxae IV. Labium light yellow-brown, longer than wide, constricted laterally below midlength, distal margin straight, reaching midlength of endites. Maxillae same color as labium, longer than wide, concave in the outer lateral midhalf and with a very shallow cavity in the inner side. Scopulae dorsad of the inner

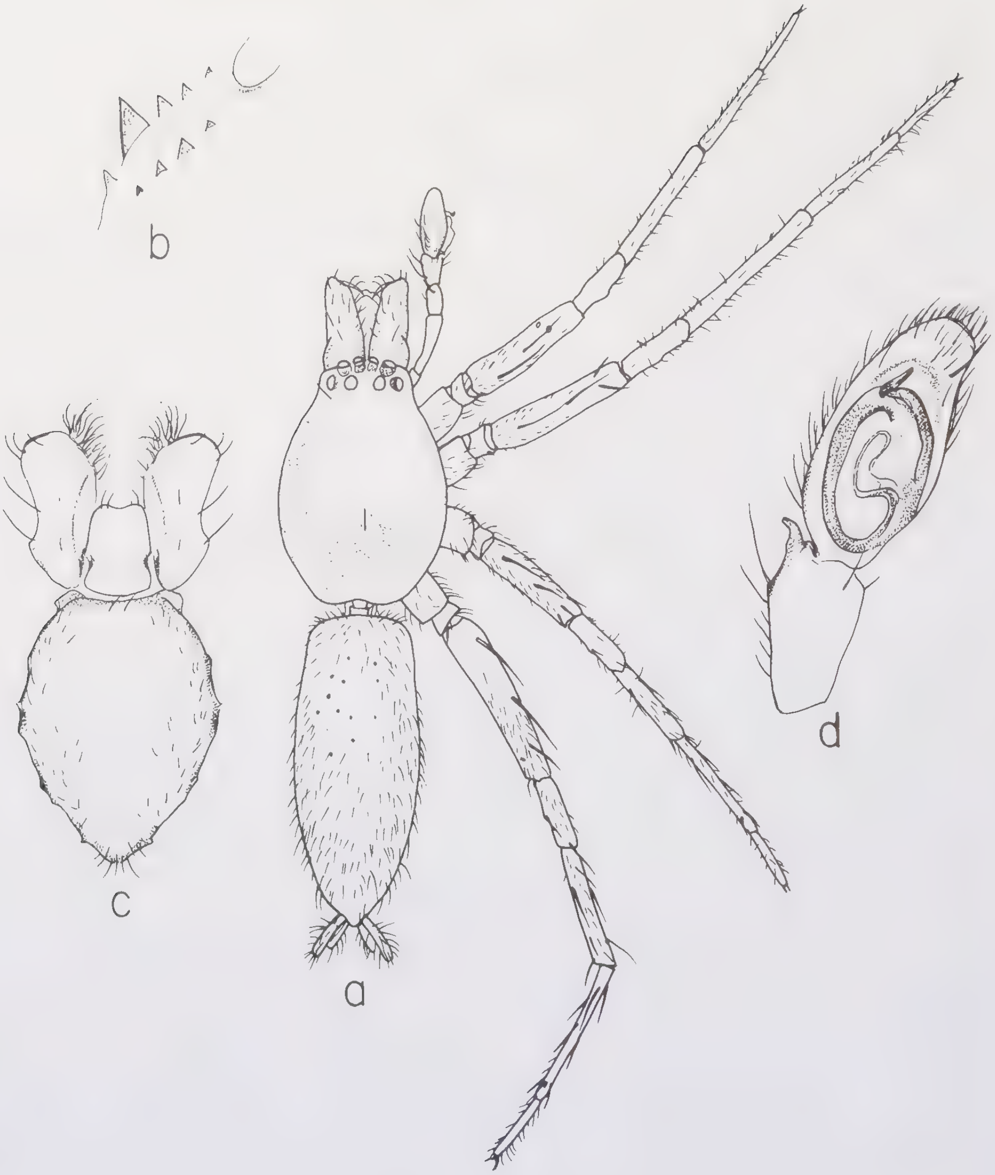

Fig. 75. Male *Clubiona zandstrai* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

lateral shallow cavity. Chelicerae brown, attenuate, moderately stout, and bearing long hairs frontally and scopulae dorsad of the five promarginal teeth. Subbasal tooth of promargin the largest. Retromargin with four small teeth. Legs yellow and moderately slender. Spination in femora I = II = 3-0-1-0, III = IV = 3-0-1-1; tibiae I = II = 0-4-0-0, III = IV = 0-3-2-2; metatarsi I = II = 0-2-0-0, III = 5-4-2-1, IV = 5-4-2-2. Subapicoventral modified spine of tibiae II absent. Metatarsus I/tarsus I = 1.44. Tarsi two-clawed, each claw with nine or ten teeth, claw tuft moderately sparse, plumose, and clubbed at tip. Leg formula 4213. Pedipalps a little shorter than femora IV, tibia with a long subapicoprolateral and an equally long submedioprolateral spine. Retrolateral tibial apophysis short, less than tibial diameter, U-shaped with oppositely twisted tips. Cymbium moderately convex, longer than wide, and rounded apically. Embolus moderately short, basally twisted, and the rest forming an erect structure (seen in ventral view) and directed laterally outward in retrolateral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.93	0.38	0.84	0.65	0.45	3.25
2	1.10	0.45	1.13	0.81	0.50	3.99
3	0.80	0.43	0.69	0.84	0.35	3.11
4	1.38	0.53	1.09	1.31	0.50	4.81
Pedipalp	0.48	0.23	0.23	–	0.40	1.34

Abdomen yellow, longer than wide, anterior end subtruncate with dense cluster of curved setae, median area with at least 11 pairs of transverse setae arranged in two longitudinal rows. Anal tubercle small and sub-

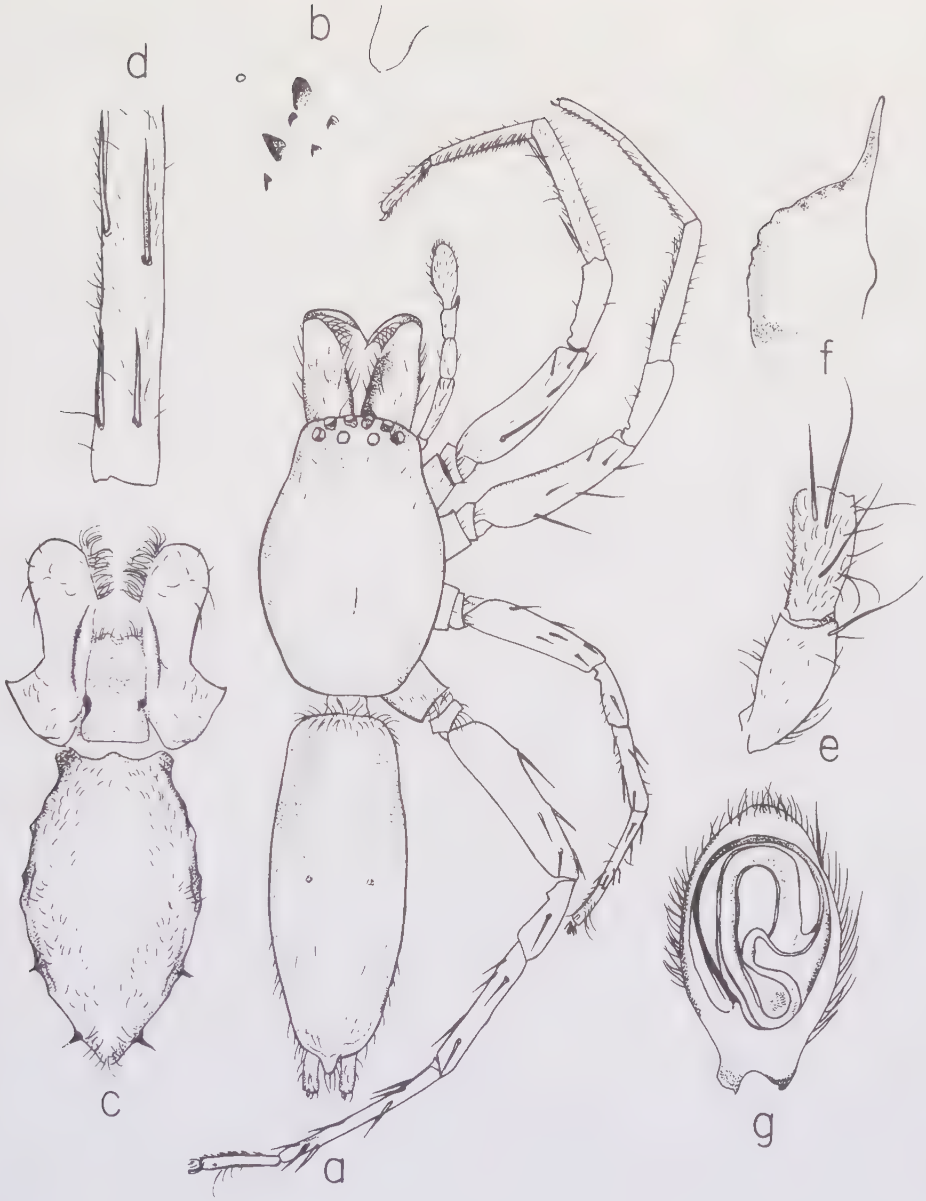

Fig. 76. Male *Clubiona parangunikarta* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); ventral spines of tibia I (d); patella and tibia without apophysis (e); retrolateral tibial apophysis (f); and ventral view of pedipalp (g).

triangular, and curved upwards. Posterior spinacles slender, slightly longer than the apical pair, and strongly diverging. Anterior pair yellow-brown and darker than the median and posterior pair. All spinnerets diverging.
Etymology: Dedicated to Dr Hubert Zandstra, former head of the Cropping Systems Programme and Deputy Director General of IRRI.
Natural history: One male collected from yellow pan trap samples in January.
Material examined: **PHILIPPINES:** *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 30 January 1985, A.T. Barrion.
Distribution: Philippines.

Clubiona parangunikarta new species
(Fig. 76a–g)

Description:
Male: Total length 6.05 mm. Cephalothorax 2.75 mm long, 2.05 mm wide, 1.30 mm high. Abdomen 3.30 mm long, 1.40 mm wide, 1.50 mm high. Cephalothorax brown with black eye rings and pale reddish brown cephalic area and longitudinal fovea. Eight eyes in two rows, straight AE row shorter (0.93 mm) than PE (1.20 mm). Eye diameter (mm): ALE = 0.18, PME = 0.15, AME = PLE = 0.13. Eye separation: AME–AME as long as one eye diameter, AME–ALE 0.60 diameter of AME. PME–PME 2.7 times AME diameter, PME–

PLE 1.5 times AME diameter, ALE–PLE 0.60 diameter of AME. Median ocular quadrangle 1.6 times wider behind than in front, anterior width and length equal (0.80 mm). Clypeus height 0.60 diameter of AME. Sternum yellow, 1.70 times longer than wide (0.40 mm), median area with fine short hairs and area towards the margins bears long and dense hairs, very similar to *C. unikarta*. Labium reddish brown similar to maxillae, 1.50 times longer than broad, distal end yellow with a median cleft, laterally constricted in the basal one third. Maxillae longer than wide, constricted at midlength on the outer side and bearing a cavity on the inner lateral side opposite labium that reaches midlength of maxillae. Scopulae anterior of the inner cavity of the maxillae. Chelicerae moderately robust, attenuate and hirsute frontally. Promargin with scopulae and four teeth, subapical tooth the smallest and very close to the rounded apical tooth, basal tooth anterad of the longitudinal ridge. Retromargin with two small teeth. Legs yellow, moderately long, and bearing ventral scopulae in tarsi and metatarsi and ventrolaterals of tibiae I and II. Spination in femora I = 3-0-1-2, II = III = IV = 3-0-2-2; tibiae I = II = 0-4-0-0, III = 0-2-2-2, IV = 0-4-2-2; metatarsi I = 0-0-0-0, II = 0–1-0-0, III = 5-4-2-1, IV = 5-5-2-1. Metatarsus I/tarsus I = 2.25. Tarsi two-clawed, each claw at least with six teeth. Leg formula 4213. Pedipalp longer than metatarsi IV, combined length of patella and tibia slightly longer than patella I. Tibia with three prolateral long setae, a subapical pair with the ventral seta further forward than the anterior one, and a single submedian seta. Retrolateral tibial apophysis flat laterally with a very broad base, edge with eight or nine serrations and dorsal surfaces rough with interrupted ridge, sharply pointed but slightly curved apical process and a small swelling subbasally opposite the serrated edge, pointed process about two thirds the greatest width of enlarged base. Cymbium longer than wide, apex rounded with porrect plumose hairs. Embolus long and fine, emanating from the lateral side a little below midlength, arching the duct apically and extending to the other lateral side, almost reaching posterior four fifths the height of tegulum with its tip curving upward, curved tip of embolus distinctly posterior to the median subangulate loop of the ejaculatory duct.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.55	1.00	1.50	1.08	0.48	5.61
2	1.75	1.08	1.60	1.20	0.60	6.23
3	1.45	0.78	1.05	1.30	0.53	5.11
4	2.20	0.95	1.78	2.25	0.75	7.93
Pedipalp	0.80	0.43	0.58	–	0.65	2.46

Abdomen yellowish brown, 2.4 times longer than wide, anterior area straight and with a dense cluster of curved setae, yellow scutum-like dorsal plate about 0.60 length of abdomen. Spinnerets equally long, posterior pair more slender than the anterior pair and separated from each other basally by one half its length. Anal tubercle triangular-like and bears long brown hairs reaching midlength of posterior spinnerets. Anterior spinnerets parallel to each other, hairy basally and with a transverse hairy groove anterior to its base.

Etymology: Named after its close similarity to *C. unikarta*.

Natural history: Two males were collected from kerosene light trap in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 12 December 1984, A.T. Barrion, paratype, same data as holotype.

Distribution: Philippines.

Clubiona unikarta new species

(Fig. 77a–g)

Description:

Male: Total length 6.45 mm. Cephalothorax 2.95 mm long, 2.00 mm wide, 1.10 mm high. Abdomen 3.50 mm long, 1.40 mm wide, 1.50 mm high. Cephalothorax pale yellow-brown, becoming dark brown in the anterior cephalic area, similar to the chelicerae, and blackish in the eye margins. Cephalic area with more long brown hairs than the thoracic area, margins of the latter clothed with white hairs and brownish hairs dorsally. Fovea brown, long and longitudinally distinct. Eight eyes all homogeneous in two rows, AE shorter than PE (0.98 : 1.23 mm), slightly recurved to straight and PE straight to slightly procurved. Eye diameter (mm): ALE = 0.18, AME = PME = PLE = 0.15. Eye separation: AME–AME = 0.93 of AME diameter, AME–ALE 0.70 of AME diameter, PME–PME 2.53 times AME diameter, PME–PLE 1.53 times AME diameter, ALE–PLE 0.7 of AME diameter. Median ocular quadrangle narrower in front (0.43 mm) than behind (0.68 mm), length (0.40 mm) almost as long as anterior width (0.43 mm). Clypeus height small, one third AME diameter. Sternum yellow with yellowish brown margins, apical end expanded with a median elevation, lateral margins without cavities, except for small lateral protrusions opposite coxae, posterior end short and pointed with long hairs, much denser than those opposite coxae I–III, median area of sternum with short fine hairs. Labium longer (0.60 mm) than wide (0.35 mm), reddish brown similar to maxillae, base triangular directed to the 'flap' of sternum, subparallel-sided, apical one fourth yellow with a deep cleft medially and about 0.68 of endite length. Maxillae longer than wide with a cavity on the inner margin, lateral margin distinctly constricted in the middle, apical one third expanded laterally, and bearing scopulae on the inner apical side. Chelicerae short and robust, attenuate apically on the inner side, retromargin with two minute teeth and promargin with four teeth, third promarginal tooth towards apex small and at the base of bluntly rounded, fourth tooth. Legs yellow except yellow-brown metatarsi or tarsi, with gray scopulae, and claw tuft. Tibiae, metatarsi, and tarsi

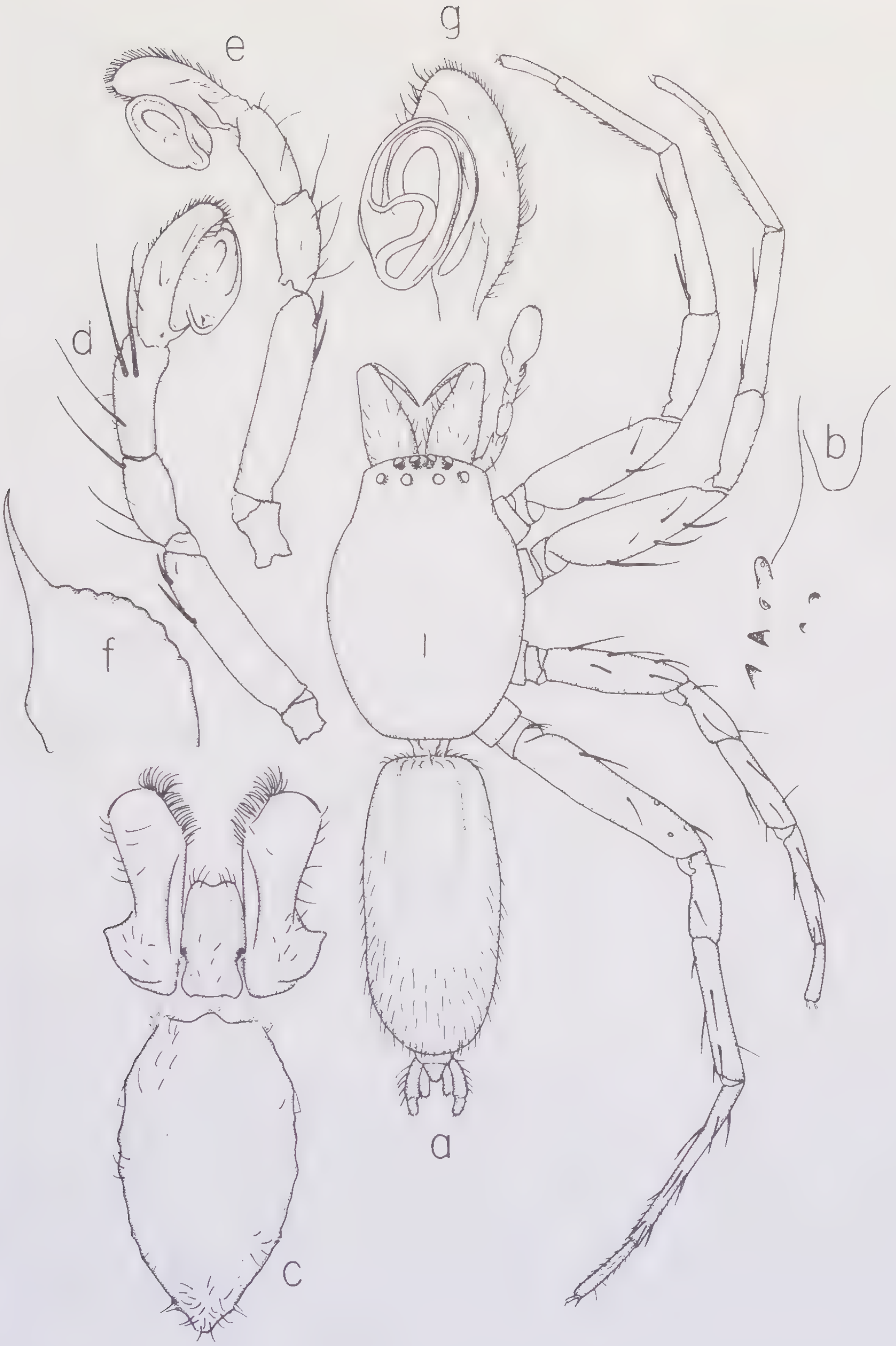

Fig. 77. Male *Clubiona unikarta* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); prolateral (d) and retrolateral (e) views of pedipalp; tibial apophysis (f); and ventrolateral (g) view of cymbium.

ringed with numerous trichobothria. Spination in femora I = 3-0-1-2, II = 3-0-1/2-2, III = 3-0-2-2, IV = 3-0-1-1; tibiae I = 0-4-0-0, II = 0-4-0-0, III = 0-2-2-2, IV = 0-4/6-2-2; metatarsi I = 0-0-0-0, II = 0-1-0-0, III = 5-4-2-1, IV = 3-4-3-3. Metatarsus I/tarsus I = 1.72. Tarsi two-clawed, each superior claw bears five to seven teeth, claw tuft clubbed. Leg formula 4213. Pedipalp shorter than metatarsus IV, combined length of patella and tibia barely three fourths of patella I. Tibia with three very long prolateral spines, a pair of subapical prolateral setae parallel to each other and their bases in a straight transverse line, and lower midhalf with a single long seta. Retrolateral tibial apophysis thinly flat, enlarged base with a serrated edge and needle-like tip, subtriangular in retrolateral wide. Cymbium without spur, subglobular with four spines, three in the basal one half and one in the middle, close to the edge or rim without basal spur. Embolus long and fine, emanating from the midlateral of one side, arching around apex of tegulum in the first loop of the duct, and ending upcurved and a little below midlateral of the other side, forming a half-circle.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.55	1.10	1.55	1.00	0.58	5.78
2	1.90	1.15	1.80	1.25	0.63	6.73
3	1.70	0.63	1.05	1.45	0.50	5.33
4	2.25	0.90	1.95	2.45	0.75	8.30
Pedipalp	0.83	0.40	0.43	–	0.70	2.36

Abdomen yellow, long and slender, anterior margin with thick row of hairs, dorsum with a prominent scutum-like plate, distinctly hirsute but sparse in the cardiac area. Venter clothed in fine hairs. Spinnerets visible dorsally. Posterior pair a little longer than the anterior pair and subparallel, its apical segment pale yellow and basal segment yellowish brown. Anterior spinnerets more robust and stouter than the posterior pair, base subcontiguous.

Etymology: Named after the unique character of retrolateral tibial apophysis (RTA), 'unik' in Tagalog.

Natural history: One male isolated from the kerosene light trap samples from Real, Quezon in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 12 December 1984, A.T. Barrion.

Distribution: Philippines.

Clubiona manipisea new species
(Fig. 78a–d)

Description:

Male: Total length 5.18 mm. Cephalothorax 1.93 mm long, 1.20 mm wide, 0.75 mm high. Abdomen 3.25 long, 0.65 mm wide, 0.70 mm high. Cephalothorax yellow, except black eye margins and brown longitudinal fovea. Cephalic area parallel-sided and thoracic area broadest between coxae II and III. Eight eyes in two rows, AE row straight to slightly recurved and shorter (0.54 mm) than the slightly procurved PE row (0.70 mm). Eye diameter (mm): ALE = 0.11, PME = 0.10, PLE = 0.09, AME = 0.08. Eye separations: AME–AME 0.63 eye diameter, AME–ALE as long as one AME, PME–PME three times diameter of AME, PME–PLE 1.13 times AME diameter, ALE–PLE ca. one third diameter of AME. PME–PLE and ALE–PME–AME more or less triangular in arrangement. Median ocular quadrangle twice broader behind than in front, anterior width 0.80 of length. AME with a long seta in between, longer than the distance between ALE. Clypeus height small, ca. 0.63 diameter of AME. Sternum yellow, longer (1.10 mm) than wide (0.68 mm), anterior end narrow, constricted laterally prior to apex opposite anterior of coxae I, anterior margin with an elevated median forming two shallow concavities. Posterior end blunt to slightly truncate between coxae IV. Labium brown, twice longer than broad, laterally constricted submedially, distal end yellow with a wide shallow cleft, beyond midlength of yellow endites. Maxillae slender, constricted midlaterally on the outer side, inner lateral side with a shallow groove in the middle and scopulae in the rest of apical part, and apex well rounded. Chelicerae moderately small and hirsute, attenuate apically in the inner part, bearing two long dorsal hairs and six to eight long hairs anterior to promarginal scopulae, venter with inner lateral margin adjacent to the black longitudinal ridge. Promargin with two teeth, apical tooth twice the basal in size and below level of basal retromarginal tooth. Retromargin with three teeth. Legs yellow, long, and slender. Spination in femora I = II = 3-0-2-2, III = 3-0-1-0, IV = 3-0-0-2; tibia I = II = 2-4-1-1, III = IV = 2-2-2-2, metatarsi I = II = 1-0-0-0, III = 4-5-1-2, IV = 4-4-2-1. Metatarsus I/tarsus I = 2.76. Tarsus two-clawed with moderately thick claw tuft. Leg formula 2143. Pedipalp shorter than either metatarsus I or II, tibia with three prolateral setae and one retrolateral seta, dorsal area with more than five trichobothria. Retrolateral tibial apophysis projected laterally and about one half diameter of tibia at its greatest width, apex truncated. Cymbium three times longer than wide, embolus long and fine, circling the apical one third, passing the yellow and apically rounded conductor, ejaculatory duct with a deep U-shaped loop in the basal one half.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.90	0.78	3.15	2.90	1.05	10.78
2	3.15	0.75	3.10	2.98	1.03	11.01
3	1.95	0.53	1.68	1.85	0.53	6.54
4	2.80	0.60	2.85	3.05	0.63	9.93
Pedipalp	0.75	0.30	0.53	–	0.70	2.28

Abdomen long and slender, yellow with light gray longitudinally striated laterals, anterior end with a short cluster of hairs, posterior end with transverse striae, in lateral view apical one third swollen or thicker than the rest of the abdomen and marked by a transverse constriction between the swollen and thinner part, posterior to the longitudinal lateral striae lined with several erect hairs, median of venter with a broad brown longitudinal band. Spinnerets equally long, posterior pair more cylindrical than the anterior pair. Anal tubercle ca. 0.60 length of posterior spinnerets.

Etymology: Derived from thin character of the species, 'manipis' in Tagalog.

Natural history: The holotype male was collected from the yellow pan trap in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI–Sipit Area Vill., holotype male, 16 August 1989, A.T. Barrion.

Distribution: Philippines.

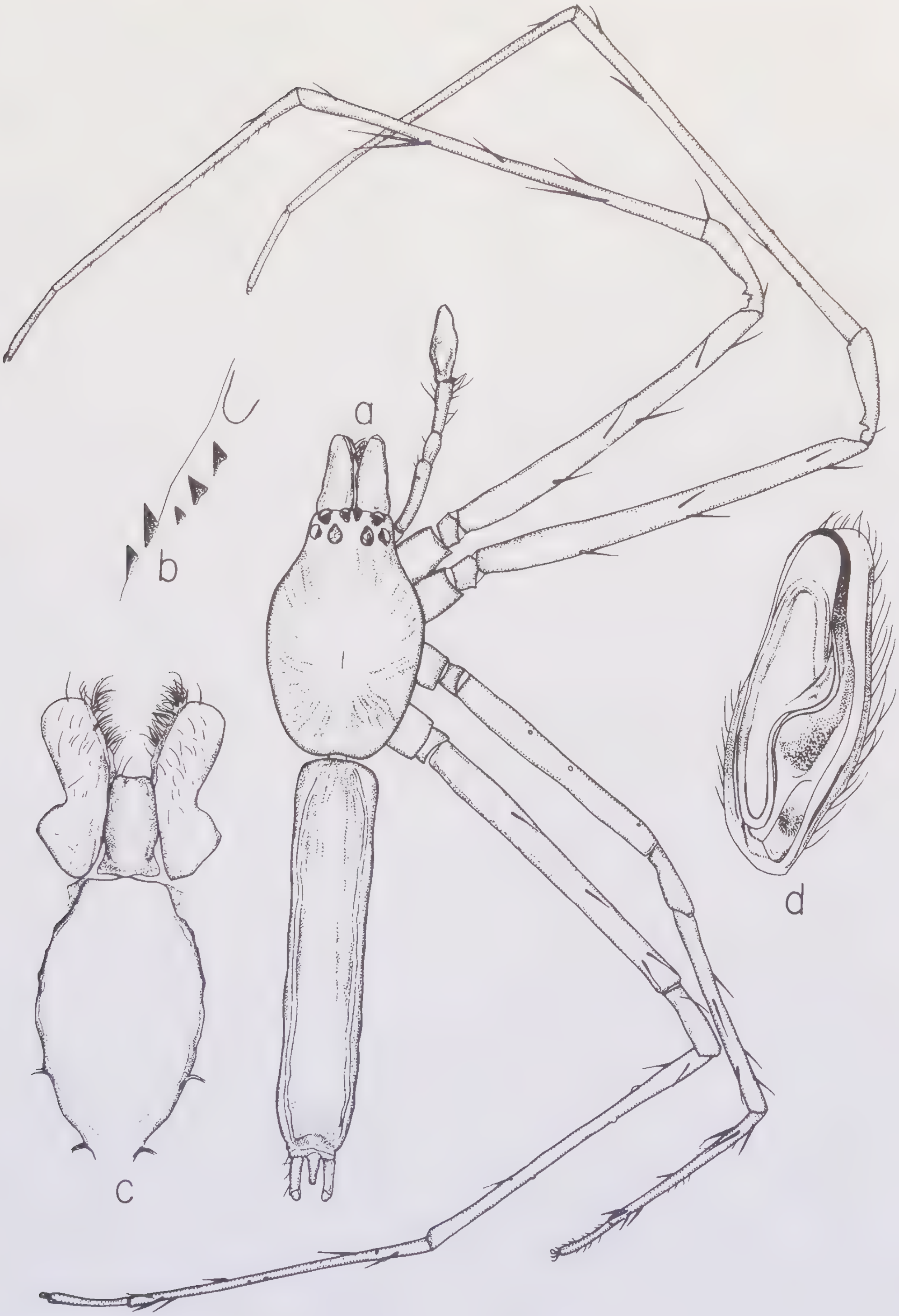

Fig. 78. Male *Clubiona manipisea* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

Genus *Clubionoides* Edwards

Clubionoides Edwards, 1958. Bull. Mus. Comp. Zool. 118: 375.

Characters: Cephalothorax with fovea. Posterior eyes equidistant or medians closer to the laterals. Leg IV longer than I. Spination of leg I: femora with three dorsal (1-1-1) and two distal prolateral spines; tibia four (2-2-0), usually three (1-2-0), ventral spines; metatarsi with three dorsal (1-1-1) and one distal prolateral spine and six (2-2-2) ventral spines. Dorsum of abdomen usually distinctly marked with gray to grayish brown chevrons and stripes. Male pedipalp variable in shape with single, simple, flat retrolateral tibia apophysis. Embolus and conductor relatively short and often concealed. Epigynum with free anterior median scape. Receptacles closer to the posterior of edge of epigynum than to the anterior.

Clubionoides kawitpaaia new species

(Fig. 79a–e)

Description:
Male: Total length 7.40 mm. Cephalothorax 2.75 mm long, 2.20 mm wide, 1.25 mm high. Abdomen 4.65 mm long, 1.35 mm wide, 1.15 mm high. Cephalothorax yellow-brown, darker in the eye area and clypeus, and black eye margins, widest dorsad of coxae II and III, dorsum with seven pairs of brown setae, forming U-shape, emanating from the short, longitudinally distinct fovea to the PLE and enclosing more than ten hairs posterior to PME. Eight eye in two rows, all clear except the slightly dark AME. AE slightly recurved and shorter than the moderately procurved PE. Eye diameter (mm): ALE = 0.15, AME = PME = 0.13, PLE = 0.11. Eye separation: AME–AME as long as 0.90 AME diameter, AME–ALE ca. 0.8 AME diameter, PME–PME 2.3 times AME diameter, PME–PLE as long as one ALE diameter, PLE–ALE about 0.60 AME or 0.50 ALE diameter. Median ocular quadrangle 1.55 times wider behind than in front, anterior width as long as length. Clypeus height very small, one third AME diameter. Sternum yellow with dark brown areas along the bases of spine-like protrusions opposite each coxa, broadened apically with a small median convexity, laterals with distinctly longer hairs than the median area, posterior end narrowly and shortly extended between coxae IV and posterior with numerous setae. Labium reddish brown except yellow distal border with a shallow median cleft, twice as long (0.60 mm) as wide (0.33 mm), base slightly procurved, distal end beyond midlength of maxillae. Maxillae yellow-brown, longer than wide, constricted anterior of pedipalp's base and bearing a shallow cavity opposite sides of labium, globular towards apex with a thick scopula anterior to the shallow inner lateral cavity, extended distally. Chelicerae small and robust, attenuate apically. Retromargin bears five small teeth, basal two teeth closer to each other and teeth 2–4 equidistantly spaced. Promargin has scopulae and four teeth, second basal tooth the largest and exactly in between tooth 1 and 3, apical tooth relatively far from tooth 3. Legs long and slender, yellow-brown except brown tibiae, metatarsi and tarsi of legs I and II, tibiae to tarsi of all legs clothed with numerous erect hairs. Spination in femora I = 3-0-2-3, II = 3-0-3-3, III–IV = 3-0-2-3, I = 0-4-1-0, II = 0-6-0-0, III–IV = 0-3-2-2, tibiae II unique, subapicoventrally with a large tooth extended beyond tibial apex and reaching part of metatarsi II, and a small blunt tooth between the apex and the large tooth, basal one third of metatarsi II curved (arched), forming a cavity in lateral view, all metatarsi with two dorsal macrosetae each, metatarsi I = II = 0-0-0-0, III = 5-4-2-1, IV = 5-4-2-2. Metatarsus I/tarsus I = 2.00. Tarsi two-clawed, each superior claw with 6–13 teeth. Claw tuft plumose apically. Leg formula 4213. Pedipalp almost as long as tibia I, tibia with four prolateral spines, retrolateral tibial apophysis short, less than tibial diameter, and curved in and out towards tip. Ventral apophysis truncate at tip. Cymbium lacks spur, bears four or five macrosetae, embolus very short, thin, and fine, borne from the side of the transparent conductor, median apophysis indistinct, tegulum with a foot-like ejaculatory duct, forming a swollen area posterior to the embolus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.68	1.40	2.80	2.03	0.90	9.81
2	3.10	1.65	3.30	2.50	1.00	11.55
3	2.10	0.85	1.75	2.10	0.55	7.35
4	3.45	1.25	3.43	4.38	0.90	13.41
Pedipalp	1.03	0.45	0.50	–	0.78	2.76

Abdomen yellow with a broad light brown longitudinal band and a pair of brown macrosetae dorsally, broadest apically and with a thick row of hairs, narrowed towards the posterior with irregular transverse gray stripes before the spinnerets and extended laterally, forming U-shaped stripes. Venter yellow with a brown bell-shaped band anterior to the epigastric furrow. Spinnerets visible dorsally, posterior pair as long as the more robust and cylindrical anterior pair. Anal tubercle prominently distinct, as long as one half of the length of posterior spinneret.

Etymology: Named after the sickle-shaped metatarsi II in Tagalog.

Natural history: A single male specimen retrieved from the kerosene light trap collection in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Llavac Vill., holotype male, 12 December 1984, A.T. Barrion.

Distribution: Philippines.

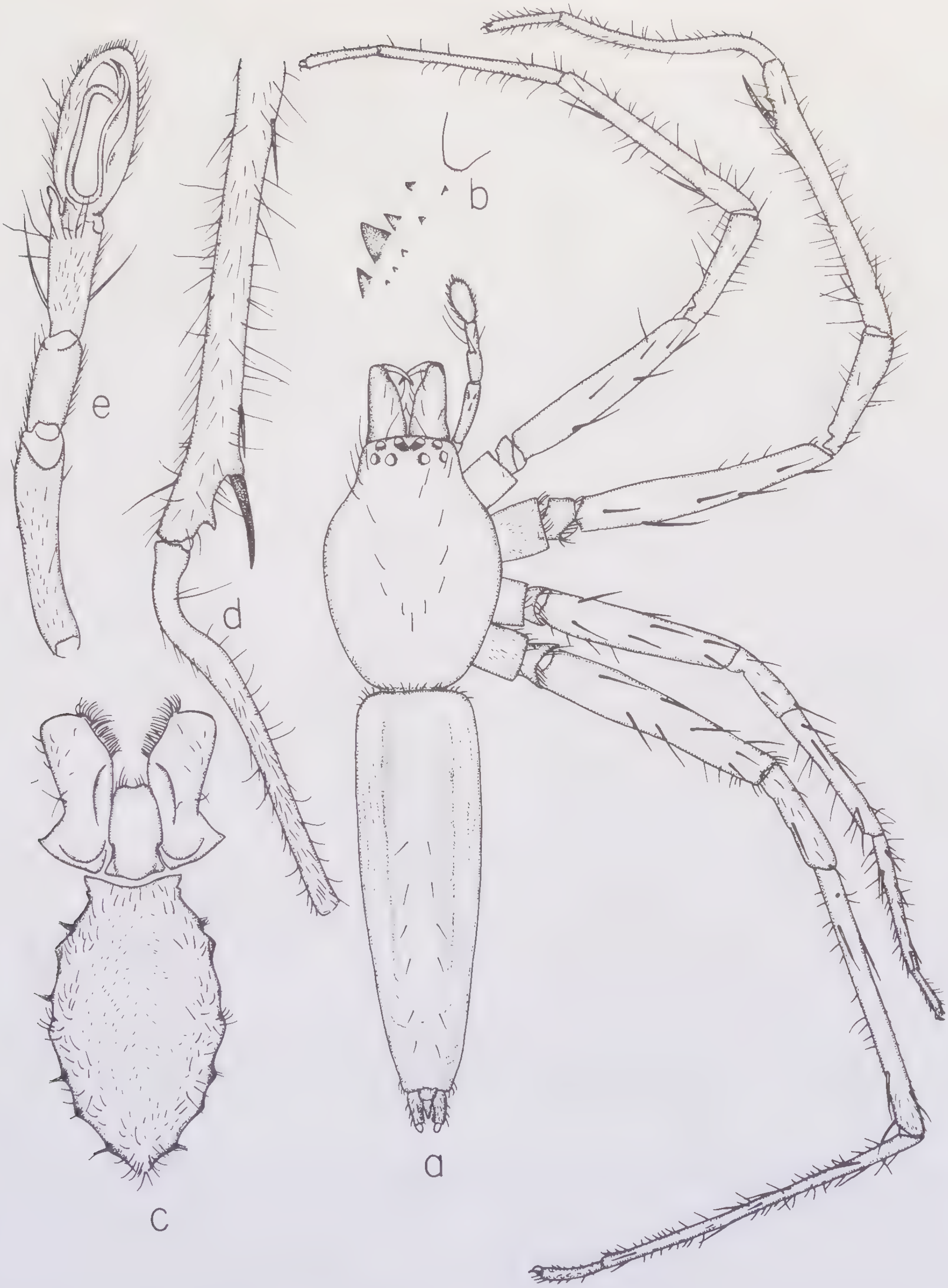

Fig. 79. Male *Clubionoides kawitpaaia* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); modified spine in tibia II and concave metatarsus II (d); and ventral view of pedipalp (e).

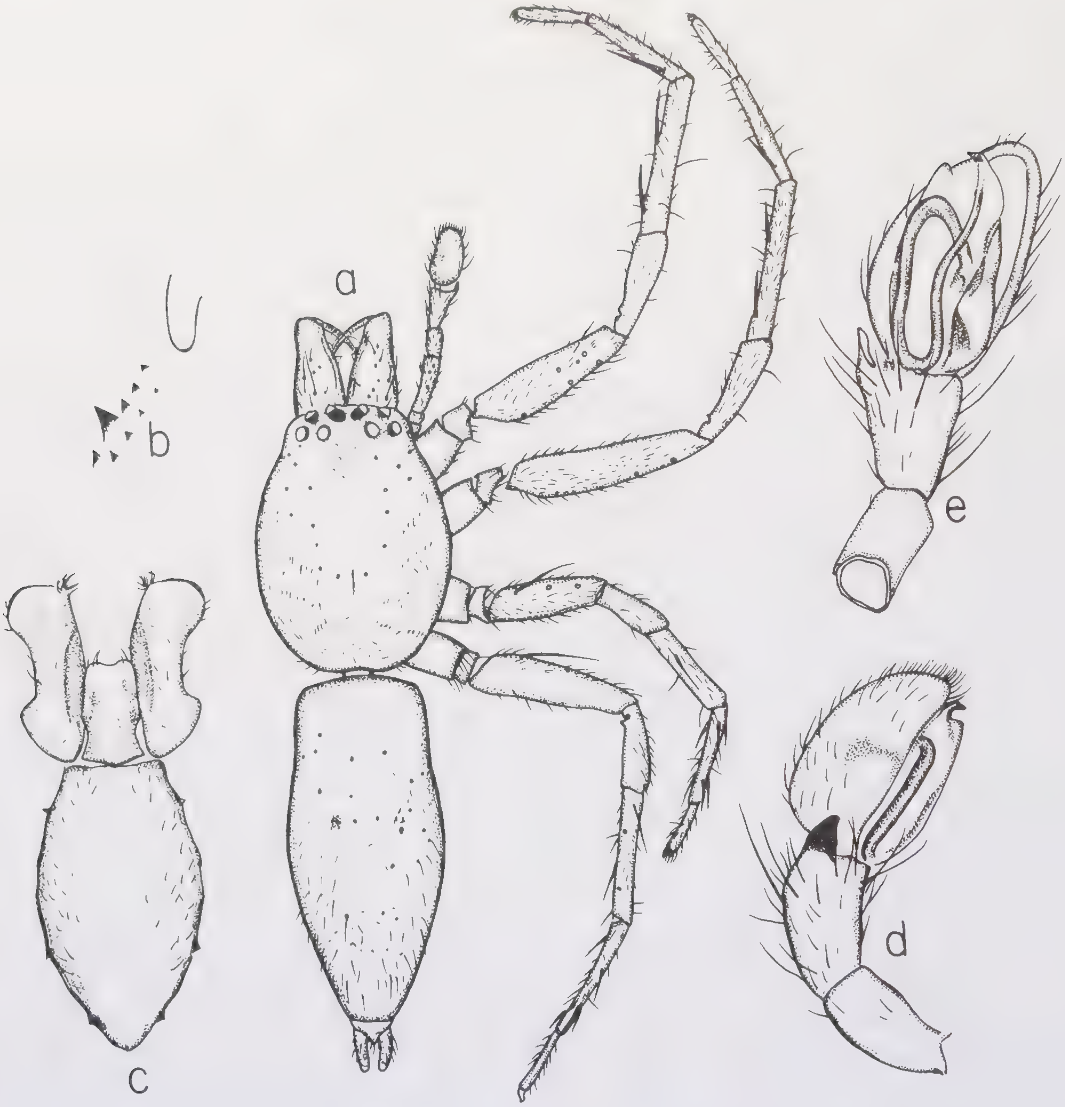

Fig. 80. Male *Clubionoides bukaea* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and lateral (d) and ventral (e) views of pedipalp.

Clubionoides bukaea new species
(Fig. 80a–e)

Description:

Male: Total length 3.40 mm. Cephalothorax 1.40 mm long, 1.25 mm wide, 0.85 mm high. Abdomen 2.00 mm long, 1.10 mm wide, 0.85 mm high. Cephalothorax yellow-brown, darker in the eye area and with black eye rings. Cephalic area with more setae than the thoracic area, mostly confined between the long longitudinal brown fovea and posterior of PE arranged in five longitudinal rows or 10–11 transverse rows. Anterior and posterior of fovea with a pair of setae each. Posterior end of cephalothorax truncate. Eight eyes in two rows, all clear except AME. AE row slightly recurved and shorter than the procurved PE row. Eye diameter (mm): AME = ALE = 0.12, PLE = PME = 0.10. AME–AME separation 0.40 eye diameter, AME–ALE one fourth diameter of AME. PME–PME separation 1.7 times AME or twice diameter of PME. PME–PLE separation as long as diameter of PME. PLE–ALE separation as long as one fourth diameter of AME. Median ocular quadrangle 1.33 times wider behind than in front and posterior width 1.6 times its length. Clypeus height very small, barely one fourth diameter of AME. Sternum yellow, longer than wide and ovoid except for a truncated anterior end with a small anterolateral flange, lateral edges opposite coxae straight and not concave, posterior end blunt between the widely separated coxae IV. Labium yellow-brown beyond midlength of maxillae, laterally constricted in the basal one half, distal end yellow and slightly cleft in the middle. Maxillae yellowish brown, longer than wide, constricted midlaterally on outer side, ending with a shallow cavity on the inner lateral side opposite labium, yellow scopulae anterior to the shallow inner cavity. Chelicerae moderately small, attenuate, with a longitudinal row of paired setae dorsally and diverging anteriorly. Promargin with scopulae and five teeth, subbasal tooth the largest. Retromargin with four minute teeth. Boss distinct. Legs uniformly yellow and relatively short. Spination in femora I = II = 3-0-2-0, III and IV = 3-0-1-1; tibiae I = II = 0-4-0-0, III = 0-3-1-1, IV = 2-2-2-2; metatarsi I = II = 0-2-0-0, III = 4-4-0-0, IV = 6-3-1-1. Metatarsus I/tarsus I = 1.45. Tarsi two-clawed, each claw with at least eight teeth, claw tuft dense, slightly clubbed to truncated at the plumose tip. Leg formula 4213. Pedipalp a little shorter than combined length of femora I and patella I, tibia with two subapical prolateral setae in oblique arrangement and one subbasal prolateral seta. Retrolateral tibial apophysis short but moderately pointed. Cymbium short, longer than wide with a slightly truncate tip, embolus very short and well dorsad of conductor. Ejaculatory duct forms an elongate loop.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.70	0.48	0.71	0.48	0.33	2.70
2	0.89	0.58	0.90	0.60	0.36	3.33
3	0.68	0.28	0.43	0.58	0.25	2.22
4	1.00	0.44	0.96	0.88	0.41	3.49
Pedipalp	0.40	0.19	0.20	–	0.33	1.12

Abdomen yellow, ovate, and broadest at midlength, anterior margin with a dense cluster of curved setae. Posterior spinnerets a little longer than the more robust anterior pair, separated from each other by one half its length.

Etymology: Named after diverging character of chelicerae ('buka' means diverging or spread in Tagalog).

Natural history: Three males (one without abdomen) were all collected through yellow pan trap in January.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 9 January 1981, A.T. Barrion; two male (one without abdomen) paratypes, same data as holotype.

Distribution: Philippines.

Clubionoides turongdaliriana new species

(Fig. 81a–d)

Description:

Male: Total length 8.25 mm. Cephalothorax 3.25 mm long, 2.35 mm wide, 1.75 mm high. Abdomen 5.00 mm long, 1.60 mm wide, 1.50 mm high. Cephalothorax yellow-brown, except brownish eye area and black eye margins, broadest dorsad of coxae II and III, with eight pairs of brown macrosetae, forming U- or V-shape, emanating from the longitudinally brown fovea to PLE and enclosing five macrosetae arranged in three longitudinal rows posterior to PME, midrow the longest (pattern which is very close to *C. kawitpaaia*). AE slightly recurved and shorter than the straight to procurved PE. Eye diameter (mm): ALE = 0.18, AME = PME = 0.15, PLE = 0.13. Eye separation: AME–AME as long as 0.80 eye diameter, AME–ALE one half of AME diameter, PME–PME 2.33 times AME diameter, PME–PLE 1.53 times AME diameter, ALE–PLE 0.60 times AME diameter. Median ocular quadrangle one third wider behind than in front, anterior width as long as length. Clypeus height very small, one third AME diameter. Sternum yellow except brown bases of spine-like lateral protrusions opposite each coxa, ovate, margin anterior constricted before apex and with two moderate clefts on the tip forming a median tubercle, sublateral margins with longer hairs than the median areas, posterior end with numerous macrosetae and moderately narrowed. Labium brown, 1.8 times longer than wide, lateral sides subparallel, distal end yellow with a median cleft and beyond midlength of maxillae. Maxillae brownish yellow, longer than wide, constricted midlaterally on the outer side and a shallow cavity on the inner side. Scopulae in the apical one fourth of the endites' inner margin. Chelicerae moderately robust and attenuate apically. Promargin with four teeth, subbasal tooth the largest. Retromargin with three small teeth. Legs yellow, becoming brown in the tibiae to tarsi of legs I and II. Spination in femora I = 3-0-2-3, II = 3-0-2-2, III = 3-0-2-3, IV = 3-0-2-2; tibiae I = II = 0-5-0-0, III = 0-3-2-2, IV = 0-3-2-2; metatarsi I = II = 0-0-0-0, III = 2-4-3-3, IV = 3-5-3-3. Tibiae II unique, apicoventral one fourth with two large spines close together, the outermost ventroprolateral spine the largest and the other spine set in the middle but posterior to the ventroprolateral spine, both spines in oblique arrangement to the postmedian ventroretromarginal spine, all tibiae to tarsi clothed with numerous erect hairs, venter of metatarsi and tarsi with thick hairs. Metatarsus I/tarsus I = 2.12. Tarsi two-clawed, each claw with 6–12 teeth, and plumose scopulae. Leg formula 4213. Pedipalp about as long as combined length of metatarsi I and tarsi I. Promargin of tibia with four long macrosetae, in two pairs with each pair close to each other. Retrolateral tibial apophysis as long as tibial diameter, angulate subbasally and like a pointing finger. Cymbium oblongate and small with two macrosetae, embolus fine and thin, occupying the apical one half of cymbial rim, its tip curved outwards beyond lateral margin, tegulum not bulbous with a slender U-shaped ejaculatory duct in the posterior one half.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.35	2.48	1.80	2.85	8.98
2	3.00	1.43	2.90	2.15	0.90	10.38
3	2.00	1.00	1.55	2.10	0.70	7.35
4	3.40	1.33	2.85	3.70	1.05	12.33
Pedipalp	1.00	0.45	0.55	–	0.70	2.70

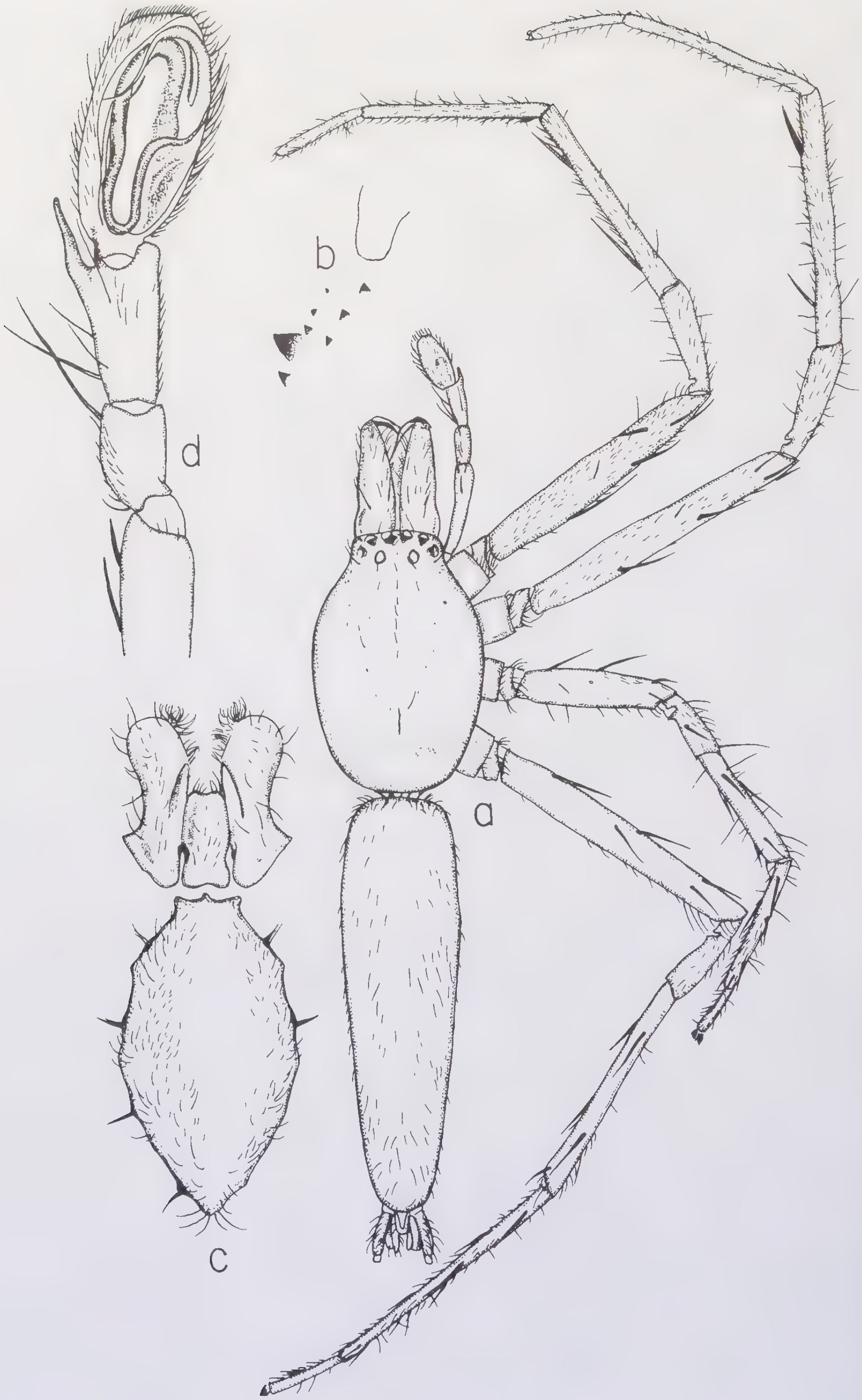

Fig. 81. Male *Clubionoides turongdaliriana* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

Abdomen yellow, elongate and broadest at mid-length, anterior end with a thick row of hairs, posterior end before anal tubercle hirsute, dorsum with pairs of macrosetae arranged longitudinally in two rows, venter pale yellow with a transverse row of brown hairs anterior to the spinnerets. Spinnerets highly visible dorsally, diverging posterior pair slender and slightly longer than the robust and parallel anterior spinnerets. Anal tubercle moderately long, hair basally, laterally, and apically, approximately 0.30 of total length of the posterior spinnerets.

Etymology: Named after the character of retrolateral

tibial apophysis, a pointing finger (in Tagalog 'daliri' = finger and 'turo' = pointing).
Natural history: Isolated from a KLT collection in December.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., one male, holotype, 12 December 1984, A.T. Barrion.
Distribution: Philippines.

Genus *Kakaibanoides* New Genus

Description: Total length 5.70–7.20 mm. Cephalothorax uniformly yellow, ovoid in dorsal view with a moderately attenuate cephalic area, flat laterally and low in the eye area, widest above coxae II, one half abdominal length. Fovea present but hardly visible. Eyes in two rows, homogeneous, AE slightly recurved and shorter than the moderately procurved PE. Eye diameter: ALE > PME = PLE > AME. Eye separation: PME–PME > PME–PLE > AME = ALE > ALE–PLE. Clypeus height small, barely one half AME diameter. Sternum subovate, anterior end straight, lateral margins without concavities except for spike-like protrusions, and posterior end moderately rounded between coxae IV. Labium longer than wide, broadest at midhalf, with a small constriction posterior to the widest point, anterior end cleft in the middle and beyond midlength of maxillae. Maxillae longer than wide. Eye diameter (mm): AME = 0.65, PLE = 0.39, ALE = 0.35, PME = 0.10. Eye separation (mm): PLE–PLE = 1.83, PME–PME = 1.73, PME–ALE = 0.40, PME–PLE = 0.38, ALE–AME = 0.10, AME–AME = 0.06. Length of eye rows (mm): PLE row = 2.28, AE = 2.10, PME = 1.86. Clypeus height very small, a little longer than AME separation. Sternum smoothly red brown, three times longer (2.10 mm) than wide (0.68 mm), margins not clearly rebordered, anterior end narrow and truncate. Legs long and slender, same color as body, sternum, and maxillae, promargin of femora I with two spines, metatarsal and tarsal venter of legs I and II spines very long and slender and bear many trichobothria. Metatarsus I with one unpaired long spine at the proximal end. Trochanter IV without notch. Tarsi two-clawed with thick claw tuft, each superior claw with 7–15 teeth, tips of claw tuft clavate. Leg formula 1423. Female pedipalp shorter than metatarsi I, tarsal claw single without teeth, but ventrally slender and curved outwards apically. Male pedipalp with the cymbium almost as long as tibia and patella, ventral apophysis and basal spur absent, median apophysis not distinct, embolus thin and U-shaped, lining the apical rim of cymbium's cavity, retrolateral tibial apophysis shortly pointed and curved towards the venter.

Abdomen slender, almost parallel-sided, and twice as long as the length of carapace anterior margin, without a thick row of hairs. Spinnerets visible dorsally, cylindrical and diverging, except the median pair, anal tubercle distinctly long, especially in the male. Dorsum and venter of male with a pair of long brownish longitudinal stripes. Epigynum bears a pair of spherical openings almost in line with epigastric groove, separated longitudinally by a thin sclerotized structure.
Etymology: A combination of the Tagalog word 'kakaiba', which means different, and noides taken from the genus *Clubionoides*.
Type species: *Kakaibanoides paranga* n. sp.
Gender: Feminine.

Kakaibanoides paranga new species

(Figs 82a–e, 83a–g)

Description:
Female: Total length 7.20 mm. Cephalothorax 2.35 mm long, 1.65 mm wide, 1.10 mm high. Abdomen 4.85 mm long, 1.15 wide, 1.25 mm high. Cephalothorax yellow except black eye margins, twice longer than wide, and broadest dorsad of coxae II. Cephalic area moderately attenuate and not as high as the thoracic area. Eight eyes homogeneous in two rows, AE straight to slightly recurved and shorter than the procurved PE; distance between AME with a long hair in the middle. Eye diameter (mm): ALE = 0.13, PME = PLE = 0.10, AME = 0.08. Eye separation: AE equidistant from each other, one fourth shorter than one AME diameter, PME–PME about four times AME diameter, PME–PLE one fifth longer than one AME diameter, ALE–PLE 0.6 AME diameter. Median ocular quadrangle much narrower in front than behind (0.25 : 0.48 mm), anterior width shorter than the length. Clypeus height very small, one half of AME diameter. Sternum yellow, longer than wide, and subovate, anterior margin straight, lateral margins without cavities except for spine-like protrusions, posterior end rounded between coxae IV. Labium longer than wide, beyond midlength of maxillae, yellow except for a small brown patch in the laterosubmedian constriction, broadest at midlength, distal margin cleft medially. Maxillae same color as sternum, longer than wide, concave midlaterally on the outer side and with a cavity on the inner lateral side opposite the labium. Scopulae yellow-brown on the inner apical one third of the maxillae. Chelicerae with a distinct boss, yellow, moderately large, attenuate apically, retromargin with two small teeth and promargin with three teeth, middle tooth the largest and scopulae anterad of the teeth, extended to the base of fang. Legs long and slender, uniformly yellow except the brownish claw and grayish claw tuft. Spination in the femora I = II = 3-0-2-2, III = 3-0-1-0, IV = 3-0-0-0; tibiae I = II = 2-4-0-0, III = 3-3-1/2-1, IV = 3-4-1-1; metatarsi I = II = 0-1-0-0, III = 5-3-1-1, IV = 7-5-1-3. Tibiae, metatarsi, and tarsi of all legs with many trichobothria. Metatarsus I/tarsus = 2.17. Tarsi two-clawed, each superior claw with 7–11 teeth, claw tuft thick with clubbed apical ends. Leg formula 1423. Pedipalp almost

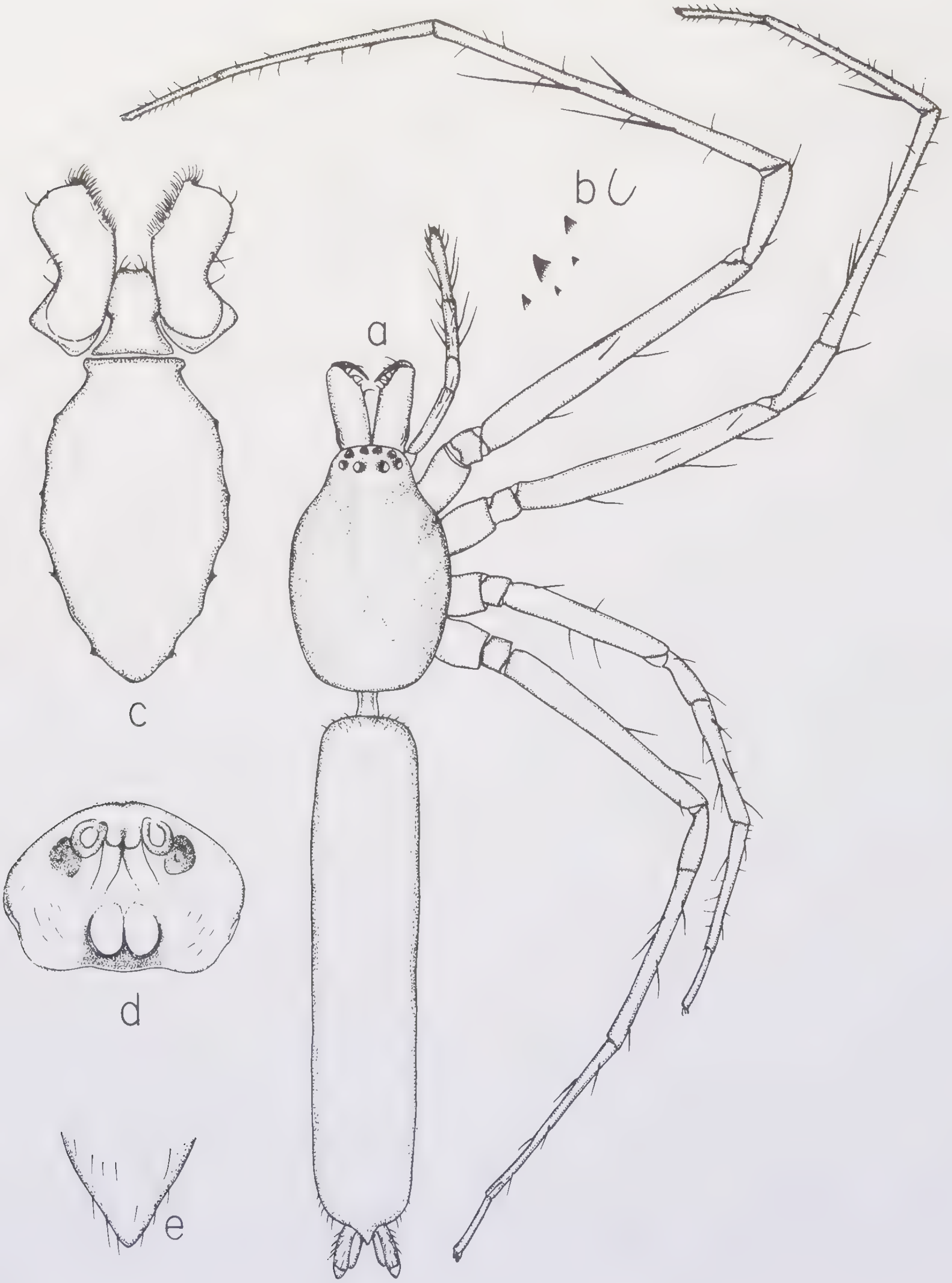

Fig. 82. Female *Kakaibanoides paranga* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); epigynum (d); and anal tubercle (e).

as long as metatarsus I, femur with two dorsal spines, tibia = 1-0-2-1, tarsus = 0-1-3-1. Tarsal claw single, toothless, directed vertically, and curved outward.

Abdomen uniformly yellow, long and slender, twice longer than the carapacial length, anterior margin without a thick row of hairs, broadest anteriorly, and tapering posteriorly. Spinnerets visible dorsally, posterior

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.05	1.15	3.40	2.50	1.15	11.25
2	2.70	0.95	2.75	1.93	0.90	9.23
3	1.75	0.60	1.55	1.50	0.60	6.00
4	3.15	0.60	2.70	2.95	0.75	10.15
Pedipalp	0.73	0.33	0.60	–	0.75	2.41

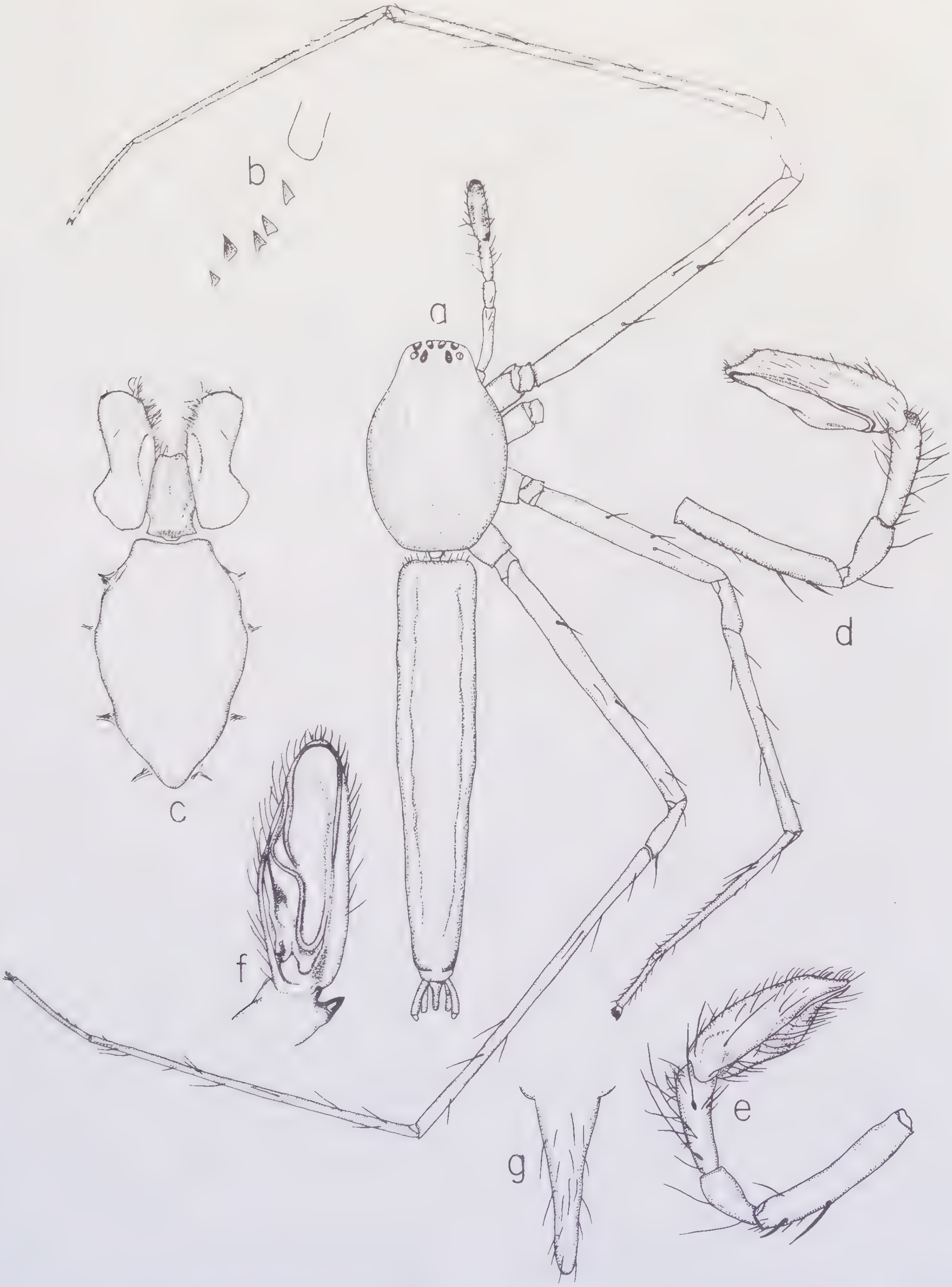

Fig. 83. Male *Kakaibanoides paranga* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); lateral (de) and ventral (f) views of pedipalp; and anal tubercle (g).

pair more cylindrical and diverging than the more robust anterior pair. Median pair close to each other. Anal tubercle very distinct and moderately long. Epigynum simple with a pair of spherical orifices separated by a narrow sclerotized plate just anterad of the epigastric groove.

Male: Total length 4.70 mm. Cephalothorax 1.90 mm long, 1.25 mm wide, 0.82 high. Abdomen 3.80 mm long, 0.75 mm wide, 0.80 mm high. Cephalothorax as in the female. Eight eyes in two rows, slightly recurved, AE shorter than the straight to slightly procurved PE. Eye diameter (mm): ALE = 0.10, PME = PLE = 0.09, AME = 0.08. Eye separation: AME–AME one fourth less than one eye diameter, AME–ALE 0.60 AME diameter, PME–PME twice PME or 2.25 AME diameter, PME–PLE as long as one AME diameter, ALE–PLE one half ALE diameter. Median ocular quadrangle much broader behind than in front (0.38 : 0.20 mm), anterior width only 0.70 of length. Clypeus height very small, 0.3 AME diameter. Sternum, labium, and maxillae as in the female. Chelicerae almost as in female except for teeth pattern, promargin with two teeth and retromargin with three teeth in increasing size towards the apex. Legs long and slender, yellow to yellowish brown, trichobothria prominent in the tibiae, metatarsi and tarsi. Spination in femora I = 3-0-2-2, III = 3-0-2-2, IV = 3-0-0-2; tibiae I = 2-4-1-1, III = 1-2-2-2, IV = 2-2-2-2, metatarsi I = 1-0-0-0, III = 5-3-1-1, IV = 4-6-4-3. Metatarsus I/tarsus I = 2.88. Tarsi two-clawed, each claw with 10–15 teeth, claw tuft thick and with club apices. Leg formula (without leg II): 14?23. Pedipalp shorter than metatarsi I, retrolateral tibial apophysis short, broad with pointed apex, ventral apophysis absent, median apophysis not distinct, embolus lines the rim of the cymbial apical cavity.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.95	0.75	3.50	2.88	1.00	11.08
2	–	–	–	–	–	–
3	1.95	0.53	1.98	1.70	0.50	6.66
4	2.88	0.55	2.75	2.80	0.65	9.63
Pedipalp	0.80	0.33	0.58	–	0.71	2.42

Abdomen similar to the female except for the two thin, longitudinal brown stripes in the dorsum, venter with a broad median longitudinal brown band.

Etymology: 'Parang' is a Tagalog term for the field, the collection site of the species, in feminine form.

Natural history: Both specimens were KLT-collected in December.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Kalilangan Vill., holotype male, 9–10 December 1986, A.T. Barrion, one male paratype, same data as holotype.

Distribution: Philippines.

Genus *Cheiracanthium* C. Koch

Cheiracanthium C. Koch, 1839. Die Arachniden 6: 9.

The genus *Cheiracanthium* consist of medium-sized yellowish spiders with nocturnal habits. They stay in chambers or silken tube retreats made of plant foliage. Members of this genus have no fovea or thoracic groove, or, if present, it is hardly noticeable; eyes subequal in size, PME farther from laterals than from each other; chelicerae moderately robust and powerfully armed with three teeth in the retromargin; legs long and slender, spinous, and lightly hairy in the metatarsi and tarsi; leg formula 1423; a slender process directed downwards, emanating from base of cymbium; epigynum with small spermathecae close to epigastric furrow. Posterior spinnerets prominently longer than the anterior pair.

Cheiracanthium daquilium new species

(Fig. 84a–j)

Description:

Male: Total length 12.20 mm. Cephalothorax uniformly brown except narrow black rings in PME and AME, broadest dorsad of coxae III, lateral margins of cephalic area almost straight, midposterior end slightly convex anterior to pedicel. Eight eyes in two equally recurved rows, all clear except AME. Eye diameter (mm): AME = 0.35, ALE = PME = PLE = 0.25. Eye separation: AME–AME 0.8 eye diameter, AME–ALE 1.7 times AME diameter, PME–PME 0.80 AME or 0.60 PME diameter, PME–PLE 0.60 AME diameter. Median ocular quadrangle wider in front than behind, wider than long when compared to the anterior and posterior width (0.85/0.95 : 0.73). Clypeus height small, ca. one half AME diameter. Sternum same color as cephalothorax, leg, labium, maxillae, and chelicerae, longer (2.45 mm) than wide (2.05 mm), anterior margin concave and posterior end blunt. Labium longer (1.35 mm) than wide (0.95 mm), laterally indented a little below midhalf, distal end light yellow with a deep notch in the middle and beyond midlength of maxillae. Maxillae longer than wide, broadest and subglobular subapically, inner marginal ridge with a longitudinal groove basad of thickly brown scopulae, anterior hairs twice as long as those in posterior area. Chelicerae porrect, long and robust, attenuated at midlength of retromargin. Promargin with five teeth, basal three teeth small, and the apical one large and strongly developed. Retromargin only with scopulae. Fang reddish brown, strongly sickle-shaped, about 0.70 of cheliceral length. Legs long and slender, brown with dark brown claw tuft, whitish yellow ventral scopulae in metatarsi and tarsi. Spination in femora I = 0-0-2-0, II = 0-0-2-0, III = 0-0-2-2, and IV = 0-0-2-2; tibiae I = 0-8-0-0, II = 0-4-1-0, III = 0-4-2-3, IV = 0-4-2-2; metatarsi I = 0-2-0-0, II = 0-5-0-0, III and IV = 0-6-3-3. Metatarsus I/tarsus I = 5.60. Tarsi two-clawed with claw tuft. Leg formulae

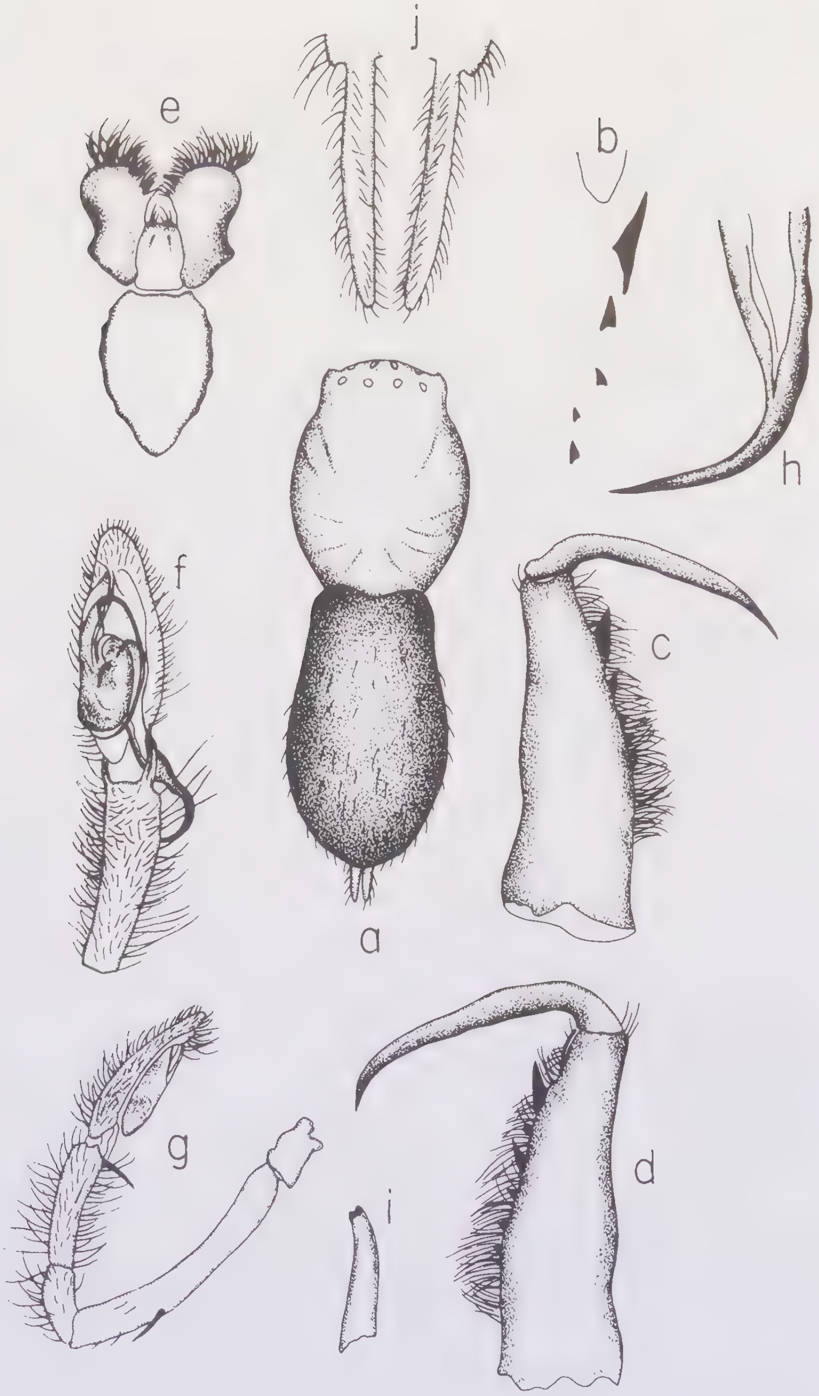

Fig. 84. Male *Cheiracanthium daquilium* n. sp. (a); cheliceral teeth (b); dorsal (c) and ventral (d) views of left chelicera; sternum, labium, and maxillae (e); ventral (f) and lateral (g) views of pedipalp; tip of basal spur of cymbium (h); apex of retrolateral tibial apophysis (i); and terminal segment of posterior spinnerets (j).

1243. Pedipalps long, yellow with brown spur and apophysis, as long as combined length of metatarsi IV and tarsi IV, retrolateral tibial apophysis slightly curved inward, with a small bifurcated apex, and its length as long as diameter of tibia. Ventral apophysis short and bluntly rounded at apex. Tibia with thick long hairs. Spur of cymbium sickle-shaped, long and slender with a very sharp inwardly curved tip, the curved tip as long as RTA on diameter of tibia, entire length of spur as long as ventral width of cymbium. Embolus strongly spiral, completing more than one loop. Tegular apophysis longitudinal, narrow and curved in the apical one half. Cymbium indented in the apical one fifth.

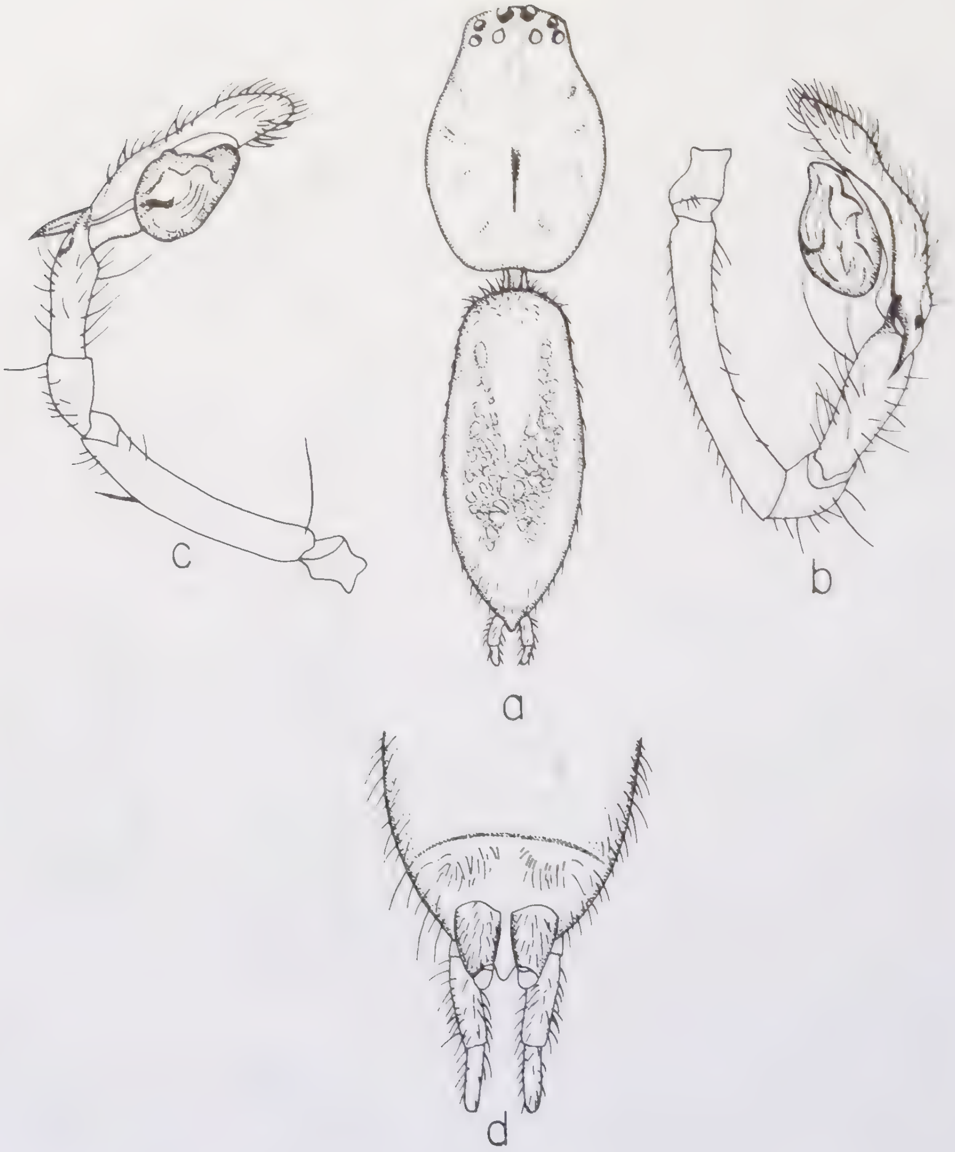

Fig. 85. Male *Cheiracanthium liplikeum* n. sp. (a); retrolateral (b) and ventrolateral (c) views of pedipalp; and ventral view of spinnerets (d).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	8.20	3.30	9.40	11.20	2.00	34.10
2	6.70	3.00	7.20	7.90	1.50	26.30
3	4.70	2.10	4.00	5.10	1.40	17.30
4	6.80	2.30	5.60	7.50	1.60	23.80
Pedipalp	3.50	1.05	2.10	–	2.45	9.10

Abdomen uniformly yellow-brown, moderately flat and wider than height, anterior midmargin cleft, posterior end slightly rounded with a long and distinctly cylindrical segment II of the posterior spinnerets highly visible.

Etymology: Named after the large size of the specimen in Bicolano, one of the local dialects.

Natural history: The only male specimen was caught on a tassel of *Zea mays* in October, preying on a cornborer moth, *Ostrinia furnicalis*.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental, Claveria, Patrocinio Vill., holotype male, 9 October 1985, A.T. Barrion.

Distribution: Philippines.

Cheiracanthium liplikeum new species
(Figs 85a–d, 86a–e)

Description:

Female: Total length 5.70 mm. Cephalothorax 2.00 mm long, 1.54 mm wide, 0.90 mm high. Abdomen 3.70 mm long, 1.65 mm wide, 1.50 mm high. Cephalothorax yellow except black eye margins, brownish band in the longitudinal fovea, and three light brown bands in each of the lateral margins of cephalothorax. Eight eyes in two rows, AE recurved and PE straight. Eye diameter

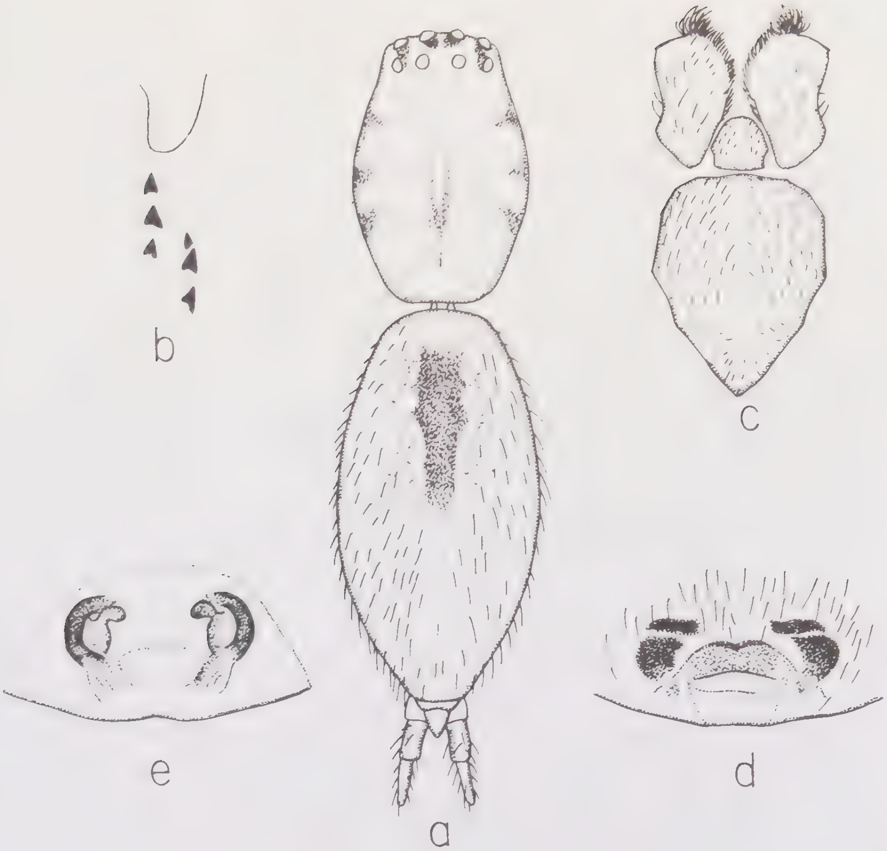

Fig. 86. Female *Cheiracanthium liplikeum* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

(mm): ALE = 0.11, AME = PLE = 0.10, PME = 0.08. Eye separation: AME–AME 1.5 times AME diameter, AME–ALE 1.3 times AME diameter, PME–PME 2.3 times AME diameter, PME–PLE twice PME or about 0.80 AME diameter. Median ocular quadrangle narrower in front than behind and wider than long. Clypeus height small, one half AME diameter. Sternum one third longer than wide, uniformly yellow, lateral edge opposite each coxa with a small protrusion, posterior end tapering between coxae IV, and anterior slightly concave. Labium yellow, as long as wide, lateral margin constricted subbasally, distal edge hairy and slightly concave. Maxillae yellow, longer than wide, anterolateral margin with brown scopulae. Chelicerae yellow-brown, broad basally, and tapering apically, promargin and retromargin with three teeth each. Legs long and slender, yellow except brown claws and yellow-brown claw tuft. Spination in femora I = 2-0-2-0, II = 3-0-1-0, III = 0-0-0-0, IV = 0-0-0-1; tibiae I = 0-1-0-0, II–III = 0-0-0-0, IV = 0-0-0-1; metatarsi I = 0-3-0-0, II = 0-2 (left leg)-0-0/0-3 (right leg)-0-0, III = 0-3-1-2, IV = 0-5-1-2, metatarsus I/tarsus I = 4.04. Tarsi two-clawed. Leg formula 1423. Pedipalp yellow except yellowish brown tarsi, femora, and tarsi, equally long and as long as patella IV, pedipalp total length shorter than femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.63	0.98	2.93	2.83	0.70	10.07
2	1.75	0.80	1.73	1.63	0.65	6.56
3	1.23	0.50	1.05	1.08	0.55	4.41
4	2.13	0.75	2.04	2.20	0.65	7.77
Pedipalp	0.75	0.34	0.53	–	0.75	2.37

Abdomen oblongate, yellow with dark yellow cardiac area. Laterals and venter same color as dorsum. Spinnerets distinctly visible dorsally, posterior spinnerets twice longer than the more robust cylindrical anterior spinnerets.

Male: Total length 4.50 mm. Cephalothorax 1.8 mm long, 1.40 mm wide, 1.00 mm high. Abdomen 2.70 mm long, 1.00 mm wide, 0.95 mm high. Cephalothorax as in the female. Eight eyes in two rows, AE recurved and PE procurved. Eye diameter (mm): AME = ALE = 0.13, PME = PLE = 0.10. Eye separation: AME–AME a little longer than AME diameter, ALE–AME as long as one PME diameter. Median ocular quadrangle wider than long and narrower in front than behind. Clypeus height small, ca. 0.4 AME diameter. Sternum, labium, and maxillae similar to the female except for width and length. Chelicerae moderately long and robust with a tooth in the subapicolateral area posterior to fang base, inner apical one third indented with scopulae, promargin with one large and one minute teeth, retromargin with three teeth. Legs long and slender, yellow with brownish yellow claw and claw tuft. Spination in femora I = 2-0-2-0, II = 3-0-1-0, III = 1-0-1-1, IV = 3-0-0-1; tibiae I = 0-7-0-0, II = 0-4-0-0, III = 0-0-1-1, IV = 0-2-0-1. Metatarsus I has three ventral spines, II has four, III has 6. Metatarsus I + tarsus I = 5.10 mm and nearly twice metatarsus II + tarsus II. Metatarsus I/tarsus I = 2.29. Tarsi two-clawed. Leg formula 1423. Pedipalp yellow with brownish apophysis and components of cymbium, retrolateral apophysis about one half length of spur, its apical tip minutely curved inwards, embolus long and fine with tip lying on the membranous conductor at distal end of bulb, retromargin of tibiae with 12 or more long hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.10	0.90	3.75	3.55	1.55	12.85
2	2.00	0.75	2.05	1.95	0.75	7.50
3	1.50	0.50	1.25	1.35	0.60	5.20
4	2.25	0.75	2.30	2.55	0.78	8.63
Pedipalp	0.90	0.28	0.55	–	0.90	2.63

Abdomen elongate, yellow with chalk-white bands running from sides of cardiac area to anterior two thirds of abdomen. Spiders visible dorsally, segment II of posterior pair about one half the diameter of segment I, cylindrical and converging at apices.

Etymology: Named after the lip-like pattern of the epigynum.

Natural history: Three specimens were separately collected from D-Vac samples taken from upland rice in August to September.

Material examined: PHILIPPINES: *Luzon Is:* Quezon Prov. Real, Llavac Village holotype female, 29 August 1984, A.T. Barrion; two male paratypes, 5 September 1984, A.T. Barrion.

Distribution: Philippines.

Cheiracanthium payateus new species
(Fig. 87a–h)

Description:

Male: Total length 4.84 mm. Cephalothorax 2.24 mm long, 1.4 mm wide, 0.83 mm high. Abdomen 2.60 mm long, 1.20 mm wide, 0.83 mm high. Cephalothorax brown with black eye margins, broad light grey longitudinal band between PME and the long black fovea, three or four striae radiate from fovea, gray spots prominent on long carapace margins above coxae I–III and pale to almost none above coxa IV. Eight eyes in two rows, recurved AE row shorter (0.74 mm) than the straight PE row (0.80 mm). Eye diameters (mm): AME = ALE = 0.14, PLE = 0.12, PME = 0.10. AME separation equal to one PME diameter. AME–ALE separation 1.8 times eye diameter. PME separation nearly twice eye diameter. PME–PLE separation greater than any eye diameter and twice AME–ALE separation. Median ocular quadrangle wider behind (0.40 mm) than in front (0.35 mm). Clypeus height almost one third of AME diameter. Sternum yellow, longer than wide, margins bordered without strong indentions but with spur-like extensions, distal end straight, proximal end tapered, and median plate slightly elevated. Labium yellow-brown, as long as broad, distal end yellow and widely concave, basal lateral one third indented, proximal end straight. Maxillae same color as labium, more yellowish proximally, outer lateral edges almost parallel above coxae, each inner side with a ridge touching lateral labium and a protrusion below each scopula. Chelicerae vertical, yellow with brown fangs and teeth, promargin and retromargin of chelicera with three teeth each, first promarginal tooth the smallest, scopulae developed, venter of chelicerae with a vertical tooth on the apical one fifth along the margin. Legs yellow. Tibial spination: I = 0-5-0-0 or 0-6-0-0, II = 0400, III = 0-0-0-1, IV = 0-0-1-1, each tarsus two-clawed with 16–23 teeth per claw. Leg formula 1423. Pedipalps yellow except brown apophyses and black emboli, retrolateral apophyses moderately short and stout with each tip curved inward, ventral tibial apophyses short with rounded tips, cymbial posterior apophyses broad basally and pointed distally, femoral length twice tibiae, tibial long hairs, ca. 20–22.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.33	0.94	4.05	3.83	1.77	13.92
2	2.22	0.88	2.44	2.22	0.83	8.59
3	1.44	0.61	1.38	1.66	0.66	5.75
4	2.27	0.88	2.50	2.83	0.83	9.31

Abdomen yellow with a dagger-like cardiac area surrounded by chalk-white marks, distal and proximal ends higher than median, the elevated posterior portion with a series of transverse striations, venter uniformly yellow. Epigastric furrow straight and transverse. Anterior spinnerets slightly shorter but more robust than basal segment of the posterior, apical segment of the posterior spinnerets very slender and ca. one half diameter of basal segment.

Etymology: Derived from the Tagalog word ‘payat’, meaning slender.

Natural history: Netted from weedy transplanted rice without standing water in September.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Puerto Princesa City, Iwahig Penal Colony, holotype male, 27 September 1987, A.T. Barrion.

Distribution: Philippines.

Cheiracanthium itakeus new species
(Fig. 88a–g)

Description:

Male: Total length 9.71 mm long. Cephalothorax 4.44 mm long, 3.33 mm wide, 2.50 mm high. Abdomen

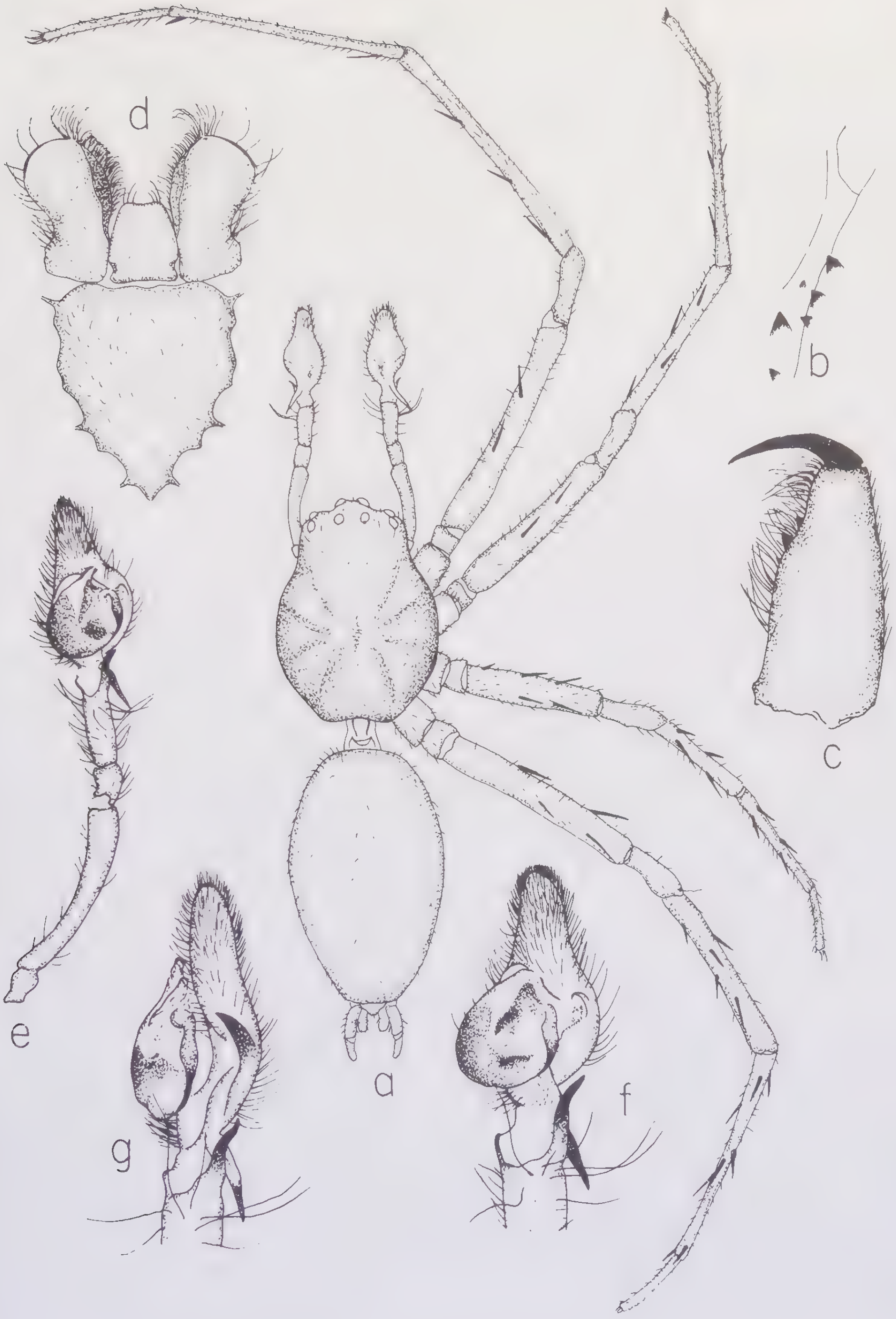

Fig. 87. Male *Cheiracanthium payateus* n. sp. (a); chelicera (b); cheliceral teeth (c); sternum, labium, and maxillae (d); ventral (e) and lateral (f) views of cymbium and tibia; entire pedipalp (g); and side view of abdomen (h).

5.27 mm long, 3.11 mm wide, 3.22 mm high. Cephalothorax yellow-brown, dark brown in the ocular and clypeal area, and yellowish posterior to the prominent longitudinal dark brown fovea, overall clothed with short but relatively thick white hairs, three or four rays radiating towards fovea. Proximal end slightly cleft and hairless. Eight eyes in two rows, recurved AE row shorter (1.68 mm) than the procurved PE row (1.84 mm). Eye diameters (mm): ALE = PLE = 0.24, AME = 0.22, PME = 0.20. AME separation 1.3 times eye diameter. AME–ALE 1.3 times ALE or 1.4 times AME diameter. PME–PME and PME–PLE separations subequal, about 1.7 times PLE diameter. Clypeus height small and less than one half AME diameter. Sternum yellow, longer (2.08 mm) than wide (0.90 mm), apical median concave, forming base of labium, margins opposite coxae bordered with two concavities, each between spur-like extensions, except coxa I, with more

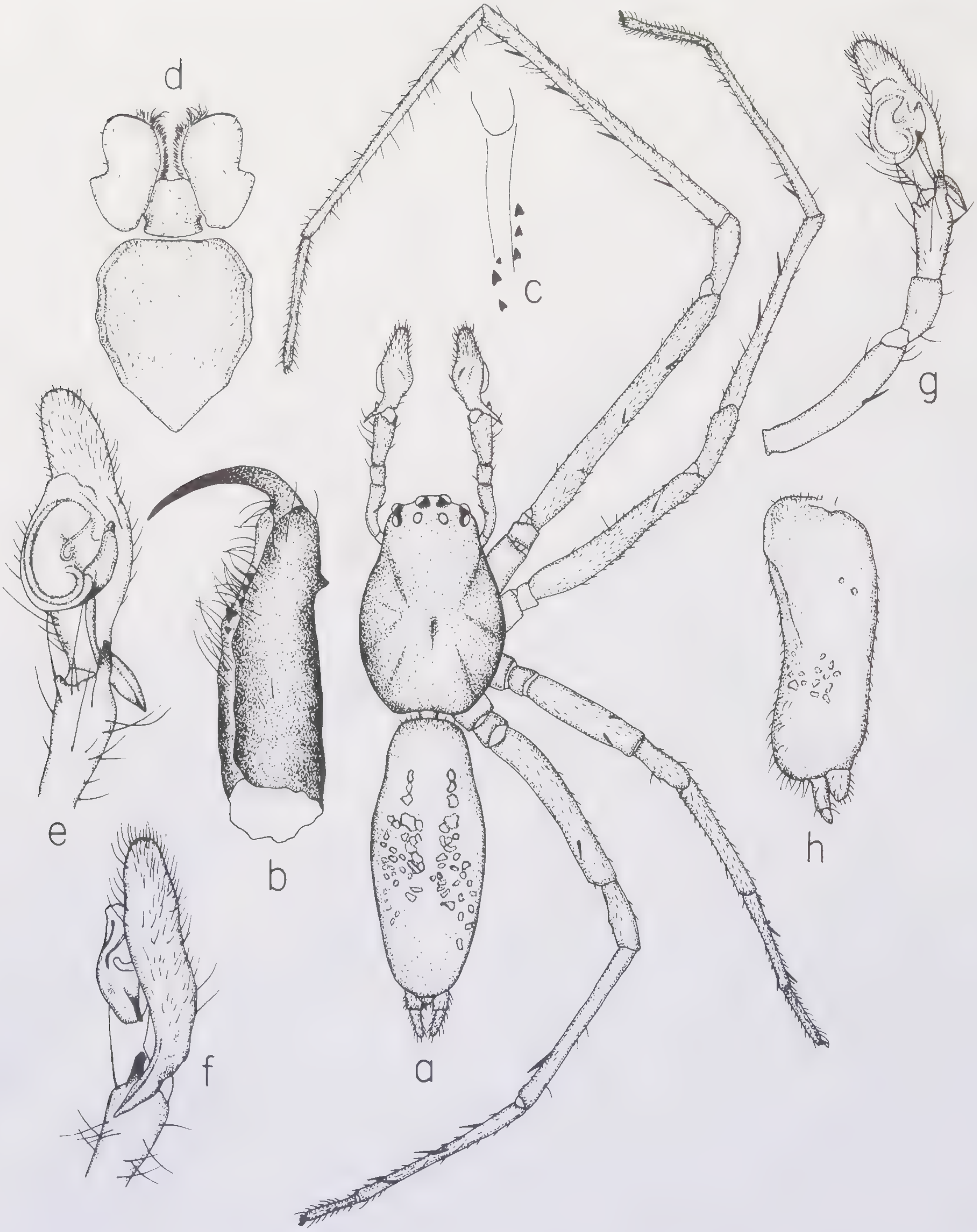

Fig. 88. Male *Cheiracanthium itakeus* n. sp. (a); cheliceral teeth (b); chelicera (c); sternum, labium, and maxillae (d); entire pedipalp (e); ventral (f) and lateroventral (g) views of cymbium and tibia.

hairs towards the margins than the median. Labium reddish brown, longer (0.80 mm) than wide (0.70 mm), narrows towards truncated distal end, basal one fourth indented laterally. Maxillae same color as labium and chelicerae, broad apically opposite scopulae, deeply indented laterally below median half, outer lateral margins up to serrulae with seven long brown hairs, inner lateral margins with a ridge higher than height of labium. Scopulae prominent with sets of short and long hairs above the ridge. Chelicerae with three promarginal and three retromarginal teeth, scopulae well developed in the promarginal ridge, white to yellow spots present in the reduced inner area of chelicerae just above large second teeth of promargin, each fang with a slightly robust base. Each boss yellow with a short ridge in front. Legs uniformly yellow except for brown setae. Tibial spination I = 0-7-0-0, II = 0-4-2-0, III = 0-2-2-2, IV = 0-3-2-2. Tarsi two-clawed each with 16–20 teeth. Leg formula 1423. Pedipalps yellow, except brown cymbium, tibiae with numerous long hairs, ca. 15, below apophyses, retrolateral apophyses long, indented along median one half above cymbium, posterior apophyses end bent outwards beyond them, prolateral apophyses moderately long with apex bent inwards, median tegular apophyses machete-like with a dorsodistal end squarely cut to the inside.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.27	2.00	7.00	7.25	2.92	25.44
2	4.94	1.77	5.00	5.20	1.83	18.74
3	3.50	1.50	3.00	4.08	1.25	13.33
4	5.16	1.80	4.66	5.75	1.66	19.03

Abdomen yellow with dense short white and sparse long brown hairs, oblong, tapering posteriorly, cardiac area unmarked, venter as in dorsum except for a transverse row of long brown hairs above the anterior spinnerets. Epigastric fold without median cleft. Anal tubercle with ca. 15–18 long hairs before triangular end. Spinnerets as in other *Cheiracanthium* except for thicker mass of hairs on inner apical region of the posterior segment.

Variation: The body length ranges 8.00–10.33 mm. Left metatarsus of leg I with a fourth midventral spine (right with only three). Cardiac area prominent in the paratypes and surrounded with chalk-white marks. Two pairs of sigillae visible in two paratypes.

Etymology: Derived from the Tagalog word 'itak' after the shape of the dorsal apophysis.

Natural history: All specimens were taken in February from a kerosene light trap set in the center of ricefield.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Anei Vill., holotype male and three male paratypes, February 1985, E. Libetario.

Distribution: Philippines.

Cheiracanthium ligawsolanum new species

(Figs 89a–e, 90a–f)

Description:

Female. Total length 6.66 mm. Cephalothorax 2.66 mm long, 1.77 mm wide, 1.38 mm high. Abdomen 4.00 mm long, 1.94 mm wide, 1.77 mm high. Cephalothorax yellow, longer than wide with both ends almost truncated, gradually elevated from proximal end of thoracic area to the cephalic area. Fovea long and longitudinal, borne on a long brown median band emanating posterior to PME. Eight eyes in two rows with black eye rings, recurved AE row shorter (0.96 mm) than the straight to slightly procurved PE row (1.04 mm). Eye diameters (mm): ALE = 0.15, AME = PME = PLE = 0.12. AME separation less than two eye diameters. AME–ALE separation 1½ times AME diameter. PME separation twice ALE diameter. PME–PLE separation twice PME diameter. Median ocular quadrangle narrower in the anterior than posterior. Clypeus height one half AME diameter. Sternum yellow, longer than wide, straight to slightly recurved apically, tapering posteriorly and with spur-like extensions laterally opposite each coxa. Labium yellow-brown, as long as wide, distal part cleft medially, basal one third with an indention laterally. Maxillae yellow with two forms of scopulae, outer lateral margins concave. Chelicerae yellow-brown, broad basally and tapering anteriorly to the fang base, with three promarginal and three retromarginal teeth, apical promarginal teeth very small, each with an ovoid, white spot above. Legs yellow, long and slender. Spination formula: tibiae I = 0-0-1-0, II = 0-0-0-0, III and IV = 0-0-0-1. Metatarsi I and II = 0-4(2-0-2)-0-0, III = 4-3-1-1, IV = 0-5-3-3. Metatarsi and tarsi of legs I and II with ventral scopulae, III and IV only tarsi with scopulae. Tarsi two-clawed, each claw with 14 teeth. Leg formula 1423. Pedipalps yellow, barely one third length of leg IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.68	1.08	2.92	2.88	1.32	10.88
2	2.04	0.96	2.00	1.90	0.88	7.78
3	1.44	0.80	1.24	1.40	0.76	5.64
4	2.40	1.00	2.24	2.56	0.92	9.12
Pedipalp	1.00	0.40	0.64	–	0.96	3.00

Abdomen yellow with chalky white markings, elongated, anterior wider than posterior. Spinnerets visible dorsally, same color as abdomen, posterior pair slender and almost twice length of anterior pair. Epigynum appears as two lips facing each other, posterior lip more concave than anterior.

Male: Total length 10.16 mm. Cephalothorax 4.16 mm long, 3.16 mm wide, 2.08 mm high. Abdomen 6.00 mm long, 3.66 mm wide, 3.33 mm high. Cephalothorax yellow-brown and clothed with short white hairs, fovea longitudinal in a slight groove, cephalic area narrowed anteriorly, thoracic area rounded, with an indention posteriorly for the pedicel. Eight eyes in two rows, AE row recurved and shorter (1.40 mm) than the straight to slightly recurved PE row (1.48 mm), right eyes smaller than left eyes. Eye diameters (mm): left side: AME = ALE = PME = PLE = 0.18, right side: AME = ALE = PME = 0.16, PLE = 0.10, AME separation 1.1 times left eye diameter and 1.3 times right eye diameter. AME–ALE separation on left side 1.3 times eye diameter and 1.9 times on right side. PME separation three times right PLE diameter. PME–PLE separation 1.9 times eye diameter on left side. Clypeus height one half AME separation, as long as eye diameter of right PLE. Sternum and labium similar to female. Outer lateral margins

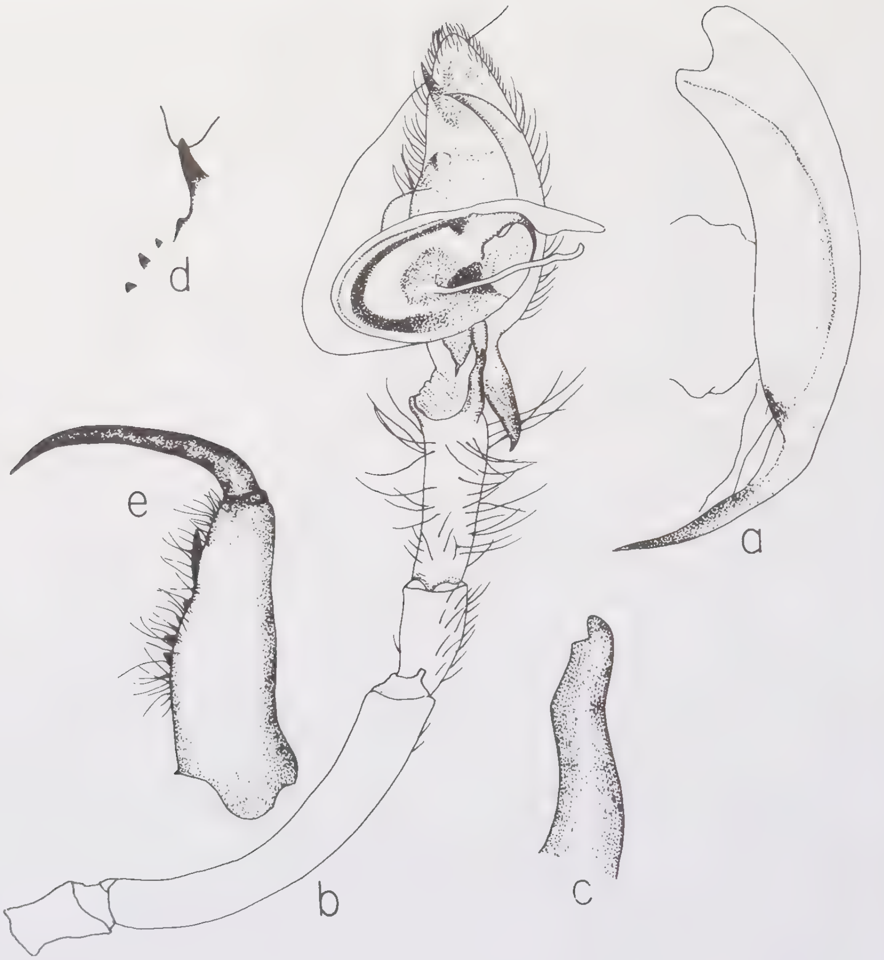

Fig. 89. Male *Cheiracanthium ligawsolanum* n. sp. retrolateral view of cymbium (a); ventral (b) view of pedipalp; close-up of tibial apophysis (c); cheliceral teeth (d); and whole chelicera (e).

of maxillae strongly indented below midhalf and with four or five long brown hairs distally below serrulae. Chelicerae moderately long with three small promarginal teeth and two retromarginal teeth, apical teeth of retromarginal robust and diagonally directed upward. Left fang dagger-like and shorter than right one. Legs long, yellow-brown, tarsi two-clawed, each superior claw with 7–14 teeth, leg formula 1423. Pedipalp with a posteriorly projected sharply pointed cymbial spur; embolus long, coiled, and filamentous; tegular apophysis slender, thin, and long, emanating from center of tegulum, apex curved and bent subapically; conducted thumb-like with two indentions underneath; RTA distinct, apex inwardly curved, terminating in a blunt apex or subapically indented towards apex; ventral apophysis short, its tip directed inwards to the retrolaterals, space in between two apophyses straight posterior to the membranous mass. Tibia with numerous long white hairs.

Abdomen ovoid, pale yellow, clothed with dense short hairs throughout and a few long brown hairs dorsally. Spinnerets visible dorsally, slender posterior pair twice as long as the partially converging anterior pair.

Etymology: Named after the host plant: 'ligaw' (Tagalog for wild) and *Solanum*.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.83	1.92	5.00	5.16	1.33	18.24
2	3.33	1.42	2.83	3.50	1.08	12.16
3	3.00	1.16	2.66	2.91	1.00	10.73
4	4.83	1.58	4.42	5.25	1.25	17.33
Pedipalp	2.20	0.70	1.10	–	1.95	5.95

Natural history: The holotype female was collected from dryland wild *Solanum* weed in August inside a rolled leaf, the paratype was taken from the stem of the same plant in September. An immature female was netted from rice foliage in June. A small female was D-Vac-suctioned from rainfed wetland rice in July.

Material examined: PHILIPPINES: *Luzon, Is.*, Laguna Prov., Caliraya, Mahipon Vill., holotype female, 22 July 1986, A.T. Barrion; paratype male and one penultimate female, same data as holotype, 25 September 1986, J.L. Catindig, one female, Pangasinan Prov., Manaoag, Lipit Vill., 18 July 1979, J.P. Bandong.

Distribution: Philippines.

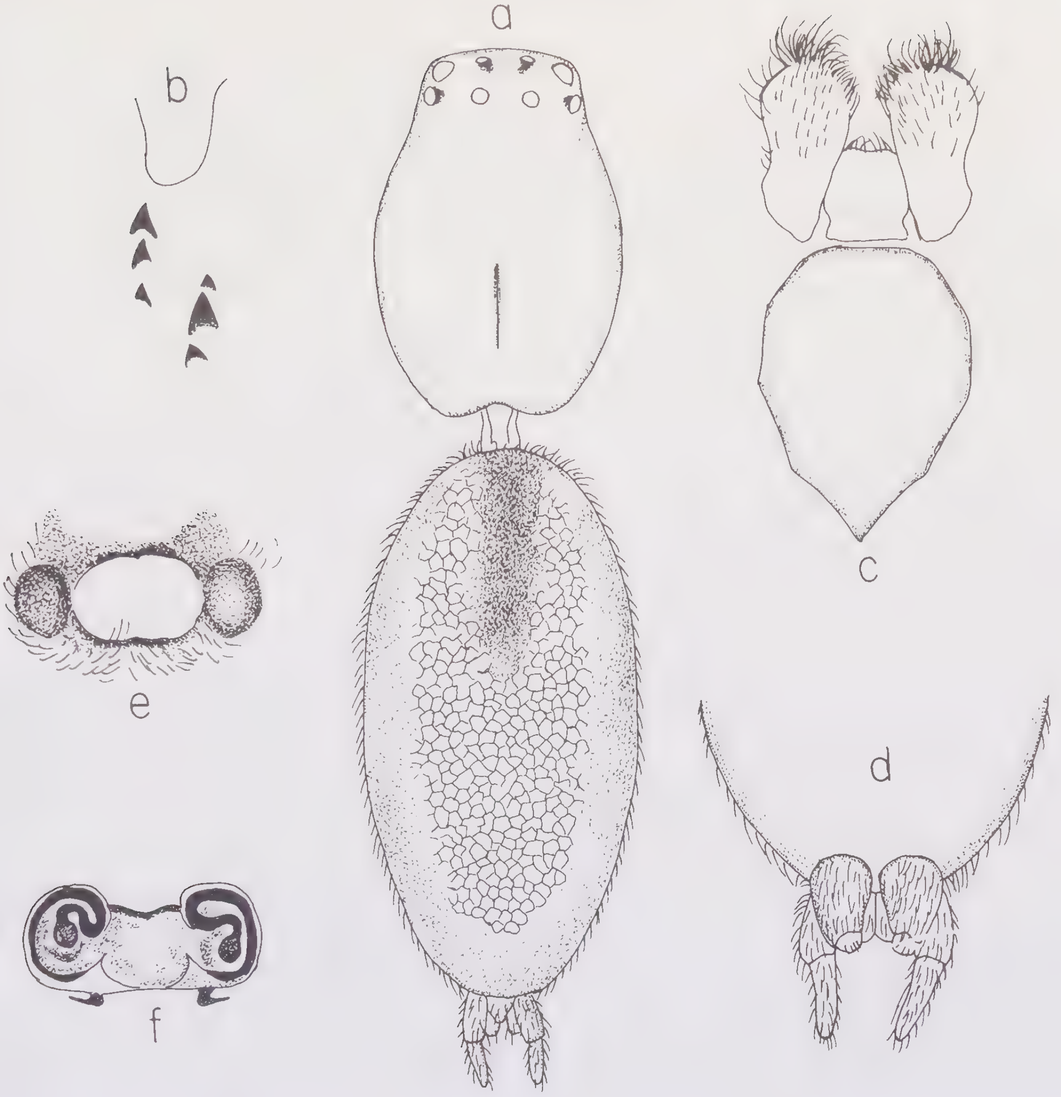

Fig. 90. Female *Cheiracanthium ligawsolanum* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); posteroventral view of abdomen showing spinnerets (d); and dorsal (e) and ventral (f) views of epigynum.

Cheiracanthium tigbauanensis new species

(Figs 91a–f, 92a–d)

Description:

Female: Total length 9.75 mm. Cephalothorax 4.20 mm long, 3.20 mm wide, 2.40 mm high. Abdomen 5.55 mm long, 4.55 mm wide, 3.88 mm high. Cephalothorax yellow-brown, blackish brown towards cephalic area, and yellowish brown in the thoracic area, ocular area with moderately long white hairs and short white hairs along the lateral margins of thorax. Cephalic area ca. one third narrower than the thoracic area. Medium thoracic area narrowly V-shaped, relatively long narrow band located in the basal one third of cephalothorax. Eight eyes in two rows, slightly recurved AE row shorter (1.60 mm) than slightly procurved PE row (1.72 mm). Eye diameters (mm) in decreasing order: AME = 0.22, PME = ALE = 0.18, PLE = 0.16. AME separation a little over one eye diameter. AME–ALE separation nearly twice ALE diameter. PME separation twice eye diameter. PME–PLE separation 2.9 times PLE diameter. Median ocular quadrangle wider behind than in front. Clypeus height one half AME diameter. Sternum yellow, bordered brown, longer (1.80 mm) than wide (1.56 mm), median of distal end recurved and elevated underneath labium, margins indented and with spur-like extension

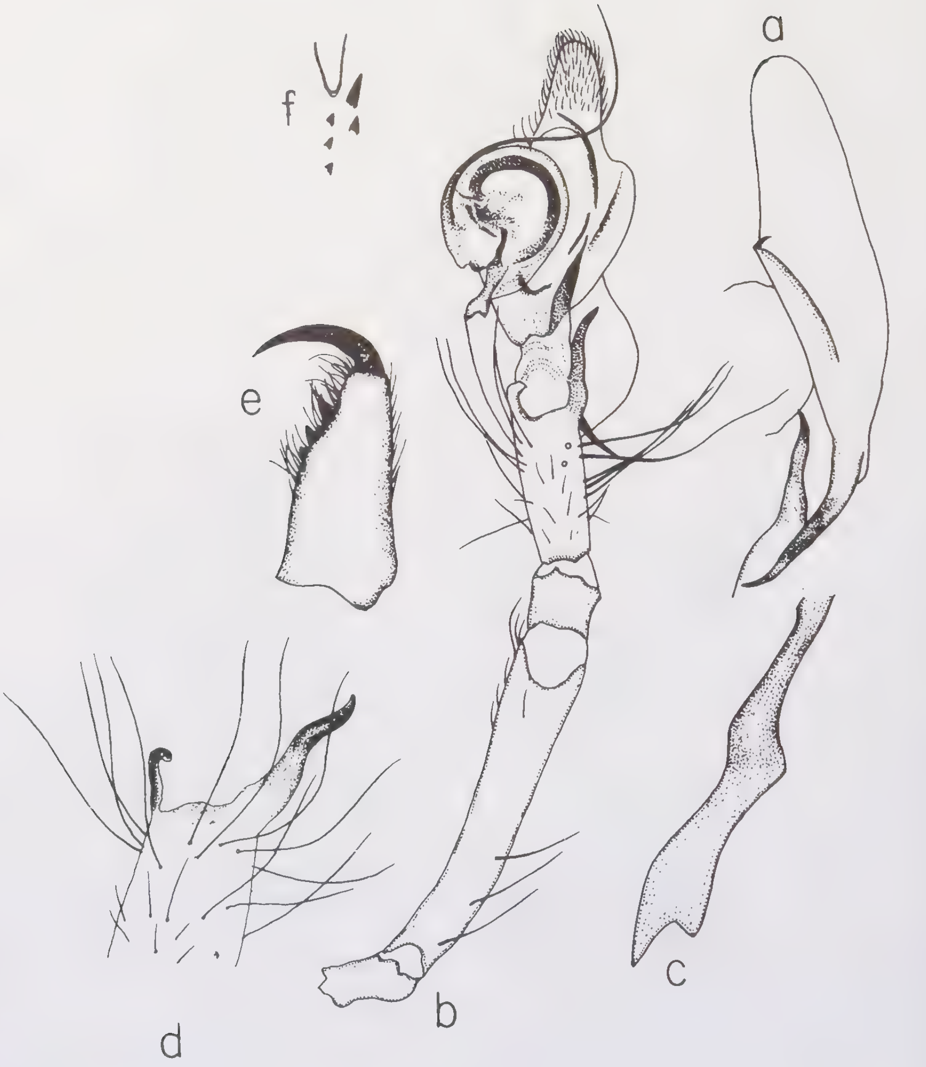

Fig. 91. Male *Cheiracanthium tigbauanensis* n. sp., retrolateral view of cymbium (a); ventral view of pedipalp (b); tegular apophysis (c); tibial apophysis (d); ventral view of left chelicera (e); and cheliceral teeth (f).

on the basal one third opposite each coxa and posterior end. Labium reddish brown, longer than wide, distal end straight to slightly cleft medially and with five to seven long brown hairs on opposite ends, and indented laterally on the basal one third. Maxillae same color as labium and mandibles, broad apically and narrow basally, outer lateral margins strongly indented above coxae of pedipalps and lined with long brown hairs, ca. 20–25, up to basal end of each serrula. Scopulae at the inner end of each serrula and distal retrolateral one fourth of maxillae. Chelicerae moderately long, vertical, promargin and retromargin each with three teeth, frontal area with white hairs, apical inner one third of chelicerae reduced, slightly concave, and criss-crossed with hairs of each scopula. Legs yellow except brownish metatarsi and tarsi. Spination formula: tibiae I = 0-2-0-0, II = 0-0-0-0, III = 0-0-1-1, IV = 0-0-1-1; metatarsi I = 0-3-0-0, II = 0-4-1-0, III = 0-3-5-4, IV = 0-6-3-3 each. Metatarsus I/tarsus I = 2.51. Tarsus two-clawed with 9–18 teeth, leg formula 1423. Pedipalps as long as metatarsus I, basal two segments yellow and apical two segments yellow-brown to reddish brown, tarsi each single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.33	1.77	4.44	4.72	1.88	17.14
2	3.33	1.55	3.27	3.55	1.22	12.92
3	2.55	1.33	2.22	2.66	1.05	9.81
4	3.66	1.50	3.33	4.16	1.11	13.76
Pedipalp	1.55	0.55	1.05	–	1.55	4.70

Abdomen ovate to globular, yellow but clothed with short brown hairs, cardiac area with white margins and lower half with four small brown sigillae along white borders. Venter similar to the dorsum, anterior spinnerets yellow with brown hairs, robust basally and converging towards each other, posterior pair more slender, diverging and twice long as anterior. Ventrolaterals with a pair of brown spots above anterior spinnerets. Epigynum with anterior and lateral margins transversely C-

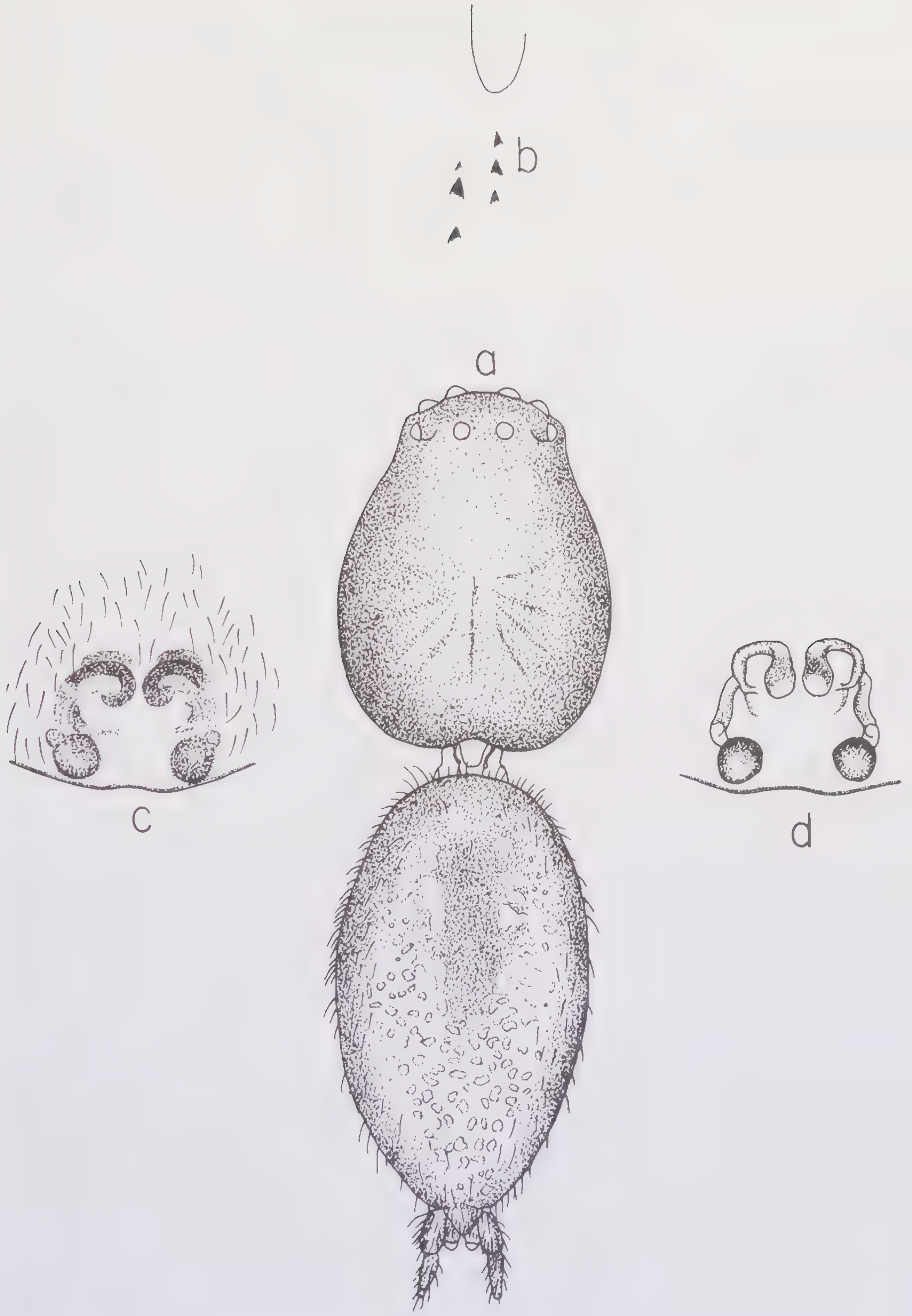

Fig. 92. Female *Cheiracanthium tigbauanensis* n. sp. (a); cheliceral teeth (b); and dorsal (c) and ventral (d) views of epigynum.

shaped, open above spermathecae, copulatory opening small and slightly triangular, with a strongly concave cavity posterior to each copulatory opening.

Male: Total length 6.82 mm. Cephalothorax 2.94 mm long, 2.22 mm wide, 1.55 mm high. Abdomen 3.88 mm long, 2.22 mm wide, 2.55 high. Cephalothorax yellow-brown and clothed dorsally with short white hairs, cephalic area narrower than broad thoracic area, which is widest between coxae II and III, median thoracic longitudinal mark, long but pale and on a shallow depression, three striae radiate to it. Eight eyes in two rows of equal diameters (0.16 mm), recurved AE row shorter (1.02 mm) than the straight PE row (1.12 mm), AME separation one eye diameter, AME–ALE separation (0.10 mm) less than one eye diameter, PME separation 1.4 times eye diameter, PME–PLE separation twice that of AME–ALE separation. Median ocular quadrangle slightly narrower (0.52 mm) in front than behind (0.54 mm). Clypeus height one half AME diameter. Retromargin with a large apical and small basal tooth. Sternum, labium, and maxillae similar to female. Legs yellow-brown, tarsus two-clawed with 8–11 teeth, leg formula 1423. Pedicel high near median, triangular in lateral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.50	1.33	3.33	3.38	1.38	12.92
2	2.33	1.00	1.94	2.44	0.83	8.54
3	2.22	1.05	1.61	2.05	0.83	7.76
4	3.22	1.16	3.16	3.22	1.16	11.92
Pedipalp	1.30	0.35	0.70	–	1.20	3.55

Pedipalps yellow except brownish tegula, their apophyses and black coiled emboli, femur with three long and erect ventral hairs on the basal one half, tibiae hirsute with long hairs close to the base of the short and blunt inwardly curved ventral apophysis and the long, medially curved but pointed tip of retrolateral apophysis, space in between two apophyses deeply concave or obliquely truncate posterior of the membranous mass, cymbium broader at midhalf, with a long pointed basal spur sliding below lateral side of retrolateral tibial apophysis, tegular apophysis moderately broad, squarely cut below before the tapering distal end.

Abdomen yellow and thinly hirsute with some long brown hairs medially, cardiac area white, sigillae absent. Venter pale yellow, epigastric fold with a median cleft. Spinnerets as in female.

Variation: The range of length in females 6.38–9.75 mm; carapace length 3.05–4.2 mm, width 2.22–3.2 mm. Abdominal length 3.33–5.55 mm, width 2.5–4.55 mm.

Etymology: Named after type locality.

Natural history: The females were collected separately from different locations in August on rainfed wetland rice. The male was collected in early November from a rolled leaf of *Echinochloa glabrescens*.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Tigbauan, holotype male, 3 August 1977, A.T. Barrion; paratype female, *Luzon Is.*, Pangasinan Prov., Manaoag, Lipit Vill., 18 August 1979, J.P. Bandong; one female (without four legs), paratype male, *Panay Is.*, Iloilo Prov., Tigbauan, 9 November 1978, A.T. Barrion.

Distribution: Philippines.

Cheiracanthium tingilium new species

(Fig. 93a–e)

Description:

Female: Total length 9.40 mm. Cephalothorax 3.90 mm long, 3.35 mm wide, 2.25 mm high. Abdomen 5.50 mm long, 3.70 mm wide, 2.85 mm high. Cephalothorax brown with dark brown foveal area and three or four lateral striae radiating from it, blackish eye margin and AME area, and reddish brown clypeus. Eight eyes, all clear, in two rows, AE slightly recurved and PE straight. Eye diameter (mm): ALE = 0.21, AME = 0.20, PME = 0.18, PLE = 0.16. Eye separation: AME–AME 0.8 eye diameter, ALE–AME 7.9 AME diameter and as long as PME separation, PME–PLE 2.2 times AME diameter. Median ocular quadrangle wider behind than in front, anterior width as long as length. Clypeus height very small, 0.4 times AME diameter. Sternum longer (1.85 mm) than wide (1.70 mm), yellow except dark brown margins, spine-like tubercles opposite each coxa, lateral margin with moderately broad concavities opposite coxae II to IV anterior to the tubercles, mid-anterior end slightly rounded and elevated with a small notch on each side, posterior end shortly pointed, sublateral area of entire sternum more hairy than the median area. Labium reddish brown, similar to the maxillae, longer (0.75 mm) than wide (0.65 mm), distal end pale yellow, hirsute, concave, and subbasolateral one third constricted. Maxillae longer than wide, subglobular distally, basal one third constricted, and apico-inner part with dense scopulae. Chelicerae dark reddish brown and attenuated subapically. Retromargin bears three teeth in increasing size apically. Promargin has three teeth, subapical one the largest and closer to the apical tooth. Venter of chelicerae with 21–23 transverse striae, promarginal side with scopulae anterior to the apical tooth and bearing dense but irregular striae. Legs yellow, becoming brownish in the metatarsi and tarsi and black in the claw tuft. Spination in femora: I = II = 0-0-2-0, III = 0-0-2-2, IV = 0-0-2-1; tibiae I = 0-2-0-0, II = 0-1-1-0, III = 0-0-2-1, IV = 0-0-1-1, metatarsi I = 0-3-0-0, II = 0-4-1-0, III = 0-4-5-4, IV = 0-5-4-4. Metatarsus I/tarsus I = 2.64. Leg formula 1423. Pedipalp yellow except blackish tarsi, total length a little longer than tibia I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.75	1.70	5.00	5.15	1.95	18.55
2	4.05	1.65	3.60	3.75	1.25	14.30
3	3.00	1.40	2.45	2.80	1.05	10.70
4	4.30	1.68	3.58	4.45	1.20	15.21
Pedipalp	1.68	0.60	1.15	–	1.59	5.02

Abdomen yellow except dark yellowish brown cardiac area and two pairs of brown globular sigillae. Dorsum of abdomen uniformly lined with U-shaped striae, 15 or more, one transverse running from posterior of the cardiac area to the oval tubercle. Laterals uniformly lined with longitudinal striae. Spinnerets visible dorsally, posterior pair distinctly longer than the anterior pair, its segment II a little shorter than segment I. Basal segments of anterior spinnerets one third wider than the posterior pair. Epigynum similar to *C. hugiscium*, scape-like process opposite the C-shaped sclerotized cavity in between the anterior of the spermathecal sacs, copulatory tube swollen at the anterior portion of the C-shaped sclerotization, and rough along its loop. Fertilization tube relatively short.

Etymology: Specific epithet derived from the Tagalog for the clitoric-like structure in the epigynum.

Natural history: One female specimen was D-Vac-collected from cogonal *Imperata cylindrica* L. ground in September.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Or. Prov., Claveria, Kalilangagan Vill., holotype female, 23 September 1987, A.T. Barrion.

Distribution: Philippines.

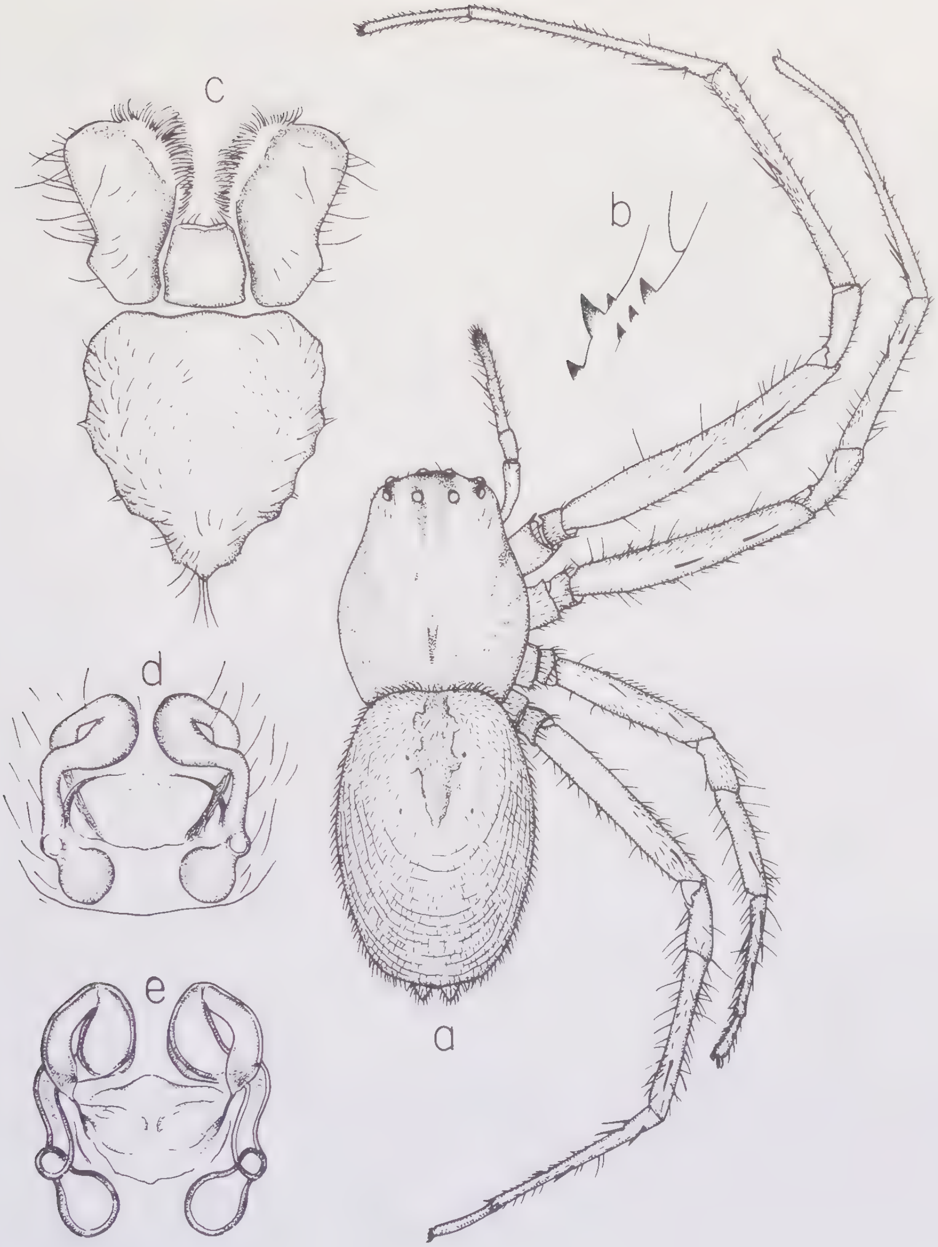

Fig. 93. Female *Cheiracanthium tingilium* n. sp. (a); cheliceral teeth (b); sternum, labium, maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Cheiracanthium bikakapenalcolium new species
(Fig. 94a–e)

Description:

Female: Total length 10.30 mm. Cephalothorax 3.50 mm long, 2.65 mm wide, 2.00 mm high. Abdomen 6.80 mm long, 3.80 mm wide, 3.70 mm high. Cephalothorax yellow, becoming brownish yellow in the cephalic and black in the AME area. Eight eyes, all clear, in two rows, AE recurved and PE pronounced. Eye diameter (mm): AME = 0.20, ALE = 0.19, PME = 0.18, PLE = 0.15. Eye separation: AME–AME as long as one AME diameter, AME–ALE 1.2 times AME diameter, PE equidistant from each other, 1.8 times AME diameter. Median ocular quadrangle narrower in front than behind, both widths distinctly longer than length. Clypeus height very small, 0.4 times AME diameter. Sternum yellow with brownish margins and lateral protrusions opposite each coxa, anterior margins almost truncate, lateral concavities anterior to the protrusions opposite each coxa, shallow and less concave, posterior tip shortly pointed. Sternal length longer (1.60 mm) than wide (0.55 mm). Labium reddish brown similar to the maxillae and chelicerae, longer (0.60 mm) than wide (0.55

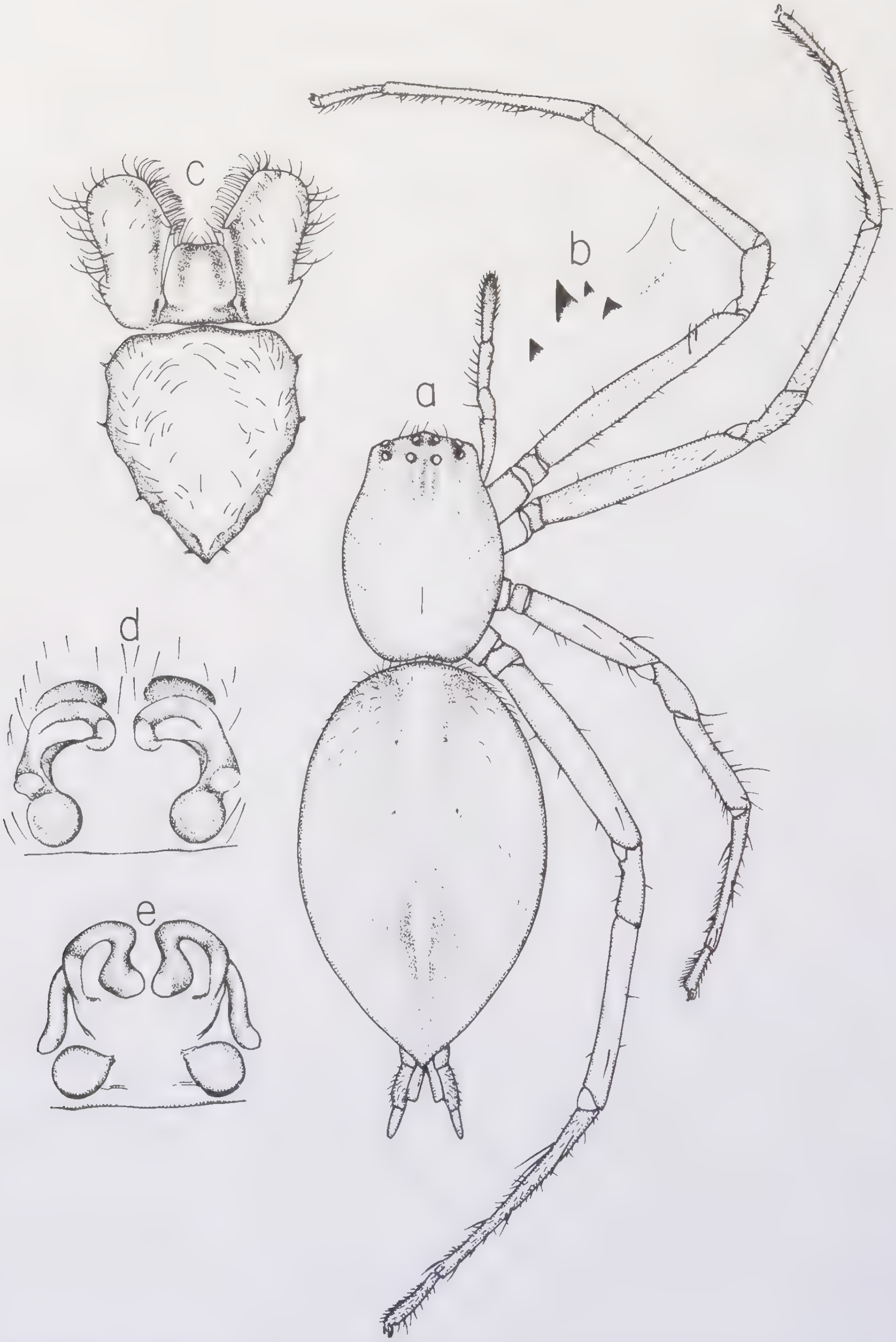

Fig. 94. Female *Cheiracanthium bikakapenalcolium* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

mm), basal one third constricted, distal margin yellowish and slightly concave at midlength. Maxillae longer than wide, broadest subapically and constricted a little below yellowish midhalf, scopulae thick, moderately long, and borne on a yellow margin. Chelicerae slightly attenuate subapically, promargin with less distinct transverse striae, scopulae, and a small tooth. Legs long and slender, yellow except yellowish brown tarsi and mostly apical one half of metatarsi, and grayish claw tuft. Spination in femora I = 0-0-1/2-0, II = 0-0-2-0, III = 0-0-1/2-0, IV = 0-0-1-1; tibiae I and II = 0-0-0-0, III = 0-0-0/1-0/1, IV = 0-0-1-1; metatarsi I = 0-2-0-0, II = 0-3-0-0, III = 0-3-3-3, IV = 0-5-3-3. Metatarsus I/tarsus I = 2.96. Leg formula 1423.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.55	1.35	3.50	3.25	1.10	12.75
2	2.95	1.30	2.65	2.75	1.00	10.65
3	2.25	1.10	1.80	2.30	0.90	8.35
4	3.35	1.25	2.90	3.35	0.88	11.73
Pedipalp	1.20	0.48	0.85	–	1.35	3.88

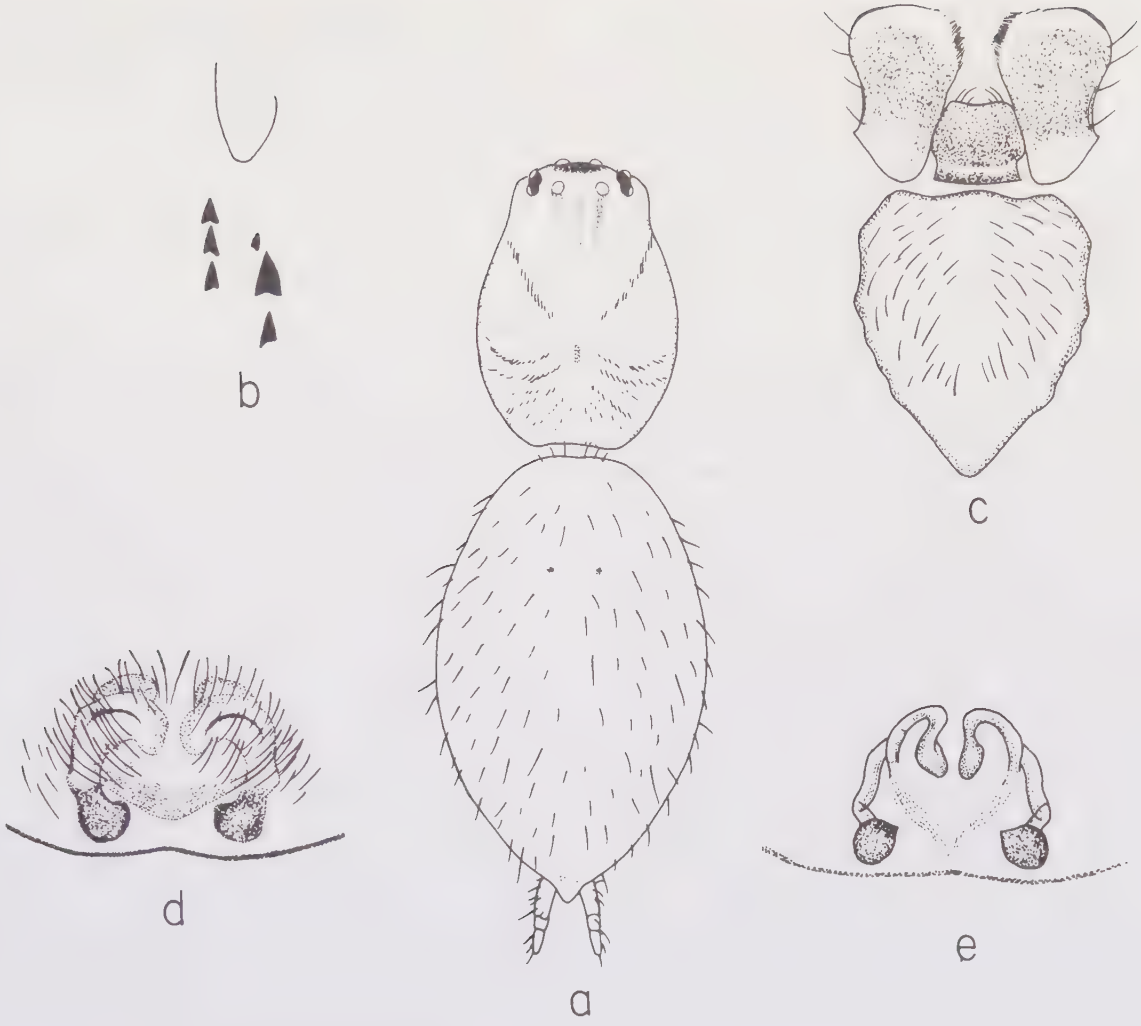

Fig. 95. Female *Cheiracanthium hugiscium* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of abdomen.

Abdomen ovate, uniformly dull yellow (with a chalk-white spot anterior to the anal tubercle if kept in Oudeman's fluid) in fresh specimens with the posterior spinnerets distinctly visible dorsally and strongly diverging. Apical segment of posterior spinnerets moderately tapers apically, less cylindrical than the stouter but shorter basal segments. Epigynum with prominent excavation, forming C-shaped structures facing each other, bears the copulatory opening deep in its concavity, spermathecal sacs small, close to the genital groove, and separated from each other by about twice spermathecal diameter. Copulatory tube looped anterior to the C-shaped plate, forming two transverse spinal-like tubes.

Etymology: Combination of the Tagalog for the diverging character of the posterior spinnerets observed in the live spider and the type locality.

Natural history: One female specimen was collected using an aspirator from a weed, *Echinochloa* sp. in September.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Puerto Princesa City, Iwahig Penal Colony Vill., holotype female, 29 September 1987, A.T. Barrion.

Distribution: Philippines.

Cheiracanthium hugiscium new species
(Fig. 95a–e)

Description:

Female: Total length 8.40 mm. Cephalothorax 3.00 mm long, 2.45 mm wide, 1.00 mm high. Abdomen 5.40 mm long, 3.05 mm wide, 2.85 mm high. Cephalothorax yellowish brown except brownish eye area and clypeus. Cephalic area not markedly distinguished from the thoracic area. Eight eyes in two rows. AE recurved and PE procurved. Eye diameter (mm): AME = ALE = 0.18, PLE = 0.16, PME = 0.15. Eye separation: AME–AME nearly one fourth wider than one AME, ALE–AME as long as one AME diameter, PME–PME = PME–PLE 2.3 times AME diameter, LE separated by about 0.3 times diameter. Median ocular quadrangle narrower in the anterior than the posterior, anterior width as long as length. Clypeus height distinctly small, as long as one third AME diameter. Sternum brownish yellow, hirsute, longer (1.50 mm) than wide (1.36 mm), with spine-like protrusion opposite each coxa, anterior end slightly high along base of labium, posterior end short but pointed. Labium reddish brown, longer than wide, distal and lateral edges grayish yellow, apical margin almost truncate and basal one fourth constricted laterally. Maxillae light reddish brown with yellow base, grayish lateral edges and pale yellow to whitish along bases of long and short scopulae. Chelicerae robust, same color as labium, attenuated in the apical one third and marked by a white spot dorsal of the attenuation. Promargin bears three teeth with the middle tooth the largest and closer to the apical tooth than to the basal one. Retromargin with three small equal-sized teeth. Legs yellow except brownish tarsi and apical one half of metatarsi and claws and gray-yellow claw tuft. Spination in femora I = II = 0-0-2-0, III = IV = 0-0-2-1; tibiae I = 0-3-0-0, II = 0-0-0-0, III = IV = 0-0-1-1; metatarsi I = II = 0-3-0-0, III = 0-3-4-3, IV = 0-3-5-4. Metatarsus I/tarsus I = 2.59. Leg formula 1423. Pedipalp yellow with reddish brown apical three fourths of the tarsi, patella II as long as IV, total length of patella almost as long as combined length of patella and tibia of leg II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.80	1.43	3.80	3.75	1.45	14.23
2	2.90	1.25	2.65	2.60	1.00	10.40
3	2.30	1.05	1.85	2.15	0.88	8.23
4	3.30	1.25	2.80	3.40	1.00	11.75
Pedipalp	1.30	0.50	0.90	–	1.25	3.95

Abdomen elongate to ovoid, uniformly yellow, and hirsute. Spinnerets visible dorsally, posterior pair distinctly longer than the anterior pair, segment II of posterior spinnerets curved upward and thin and as long as segment I. Anterior spinnerets one fourth wider than the posterior pair. Epigynum with a transverse C-shaped sclerotized plate terminating dorsad of the spermathecal sacs. Entrance duct moderately enlarged anterior to the transverse C-shaped plate, swollen structure smooth on both surfaces, almost creating a right angle inside the loop. Cephalothorax opening separated by two spermathecal sac diameters.

Etymology: Named after the C-shaped sclerotized plates facing each other in the uncleared epigynum (in Tagalog 'hugis' = C).

Natural history: The holotype specimen was collected from 13 cm (5-inch-high) rice stubble in June.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Brookes Pt., near Poblacion Vill., holotype female, 21 June 1984, A.T. Barrion.

Distribution: Philippines.

Cheiracanthium catindigae new species

(Fig. 96a–c)

Description:

Female: Total length 5.80 mm. Cephalothorax 2.00 mm long, 1.44 mm wide, 1.22 mm high. Abdomen 3.80 mm long, 2.00 mm wide, 1.94 mm high. Cephalothorax yellow-brown, blackish brown along eye margin with three or four striae radiating towards longitudinal light grayish shallow fovea. Eight eyes in two rows, AE row recurved and a little shorter (0.80 mm) than the procurved PE row (0.86 mm). Eye diameters (mm): AME = ALE = 0.12, PLE = 0.11, PME = 0.10. AME separation 1.4 times eye diameter. AME–ALE separation one eye diameter. Median ocular quadrangle wider behind (0.42 mm) than in front (0.38 mm). LE closer to each other than ME. Clypeus height smaller than one AME diameter, equal to nearly one half AME separation. Sternum yellow, longer (1.12 mm) than wide (0.87 mm), heart-shaped with straight to recurved distal end, lateral margins bordered and very slightly indented opposite coxae, though with spur-like extensions, tapering proximally to a rounded end, unextended beyond coxa IV. Labium yellow, slightly wider (0.32 mm) than long (0.30 mm), basal one fourth indented laterally and tapering apically, distal end concave medially. Maxillae yellow, lateral margins slightly indented just below median halves and wider apically, serrulae and scopulae prominent. Chelicerae yellow-brown with both margins having three teeth each, and a semitriangular pale yellow spot above each scopula and the small apical promarginal tooth. Second tooth of promargin large. Legs yellow, long, and slender. Femoral spination I = II = 0-0-1-0, III = IV = 0-0-0-1; femur IV with two long dorsal thin hairs on apical one half. Tibial spination I = II = 0-1-0-0, III = IV = 0-0-0-1; ventral metatarsal spines I = II = three spines, III = four spines, and IV = seven spines. Each tarsus two-clawed, each with 11–15 teeth. Leg formula 1423. Pedipalps yellow except brownish tarsi without claws, length ca. one third of leg IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.12	0.96	2.36	2.32	1.00	8.76
2	1.44	0.76	1.44	1.40	0.56	5.60
3	1.00	0.48	0.92	1.00	0.50	3.90
4	1.88	0.72	1.80	1.92	0.60	6.92
Pedipalp	0.80	0.32	0.48	–	0.72	2.32

Abdomen yellow with a few chalk-white marks dorsally, elongate and partially elevated medially at tip of cardiac area, sloping towards anal tubercle. Ventral and

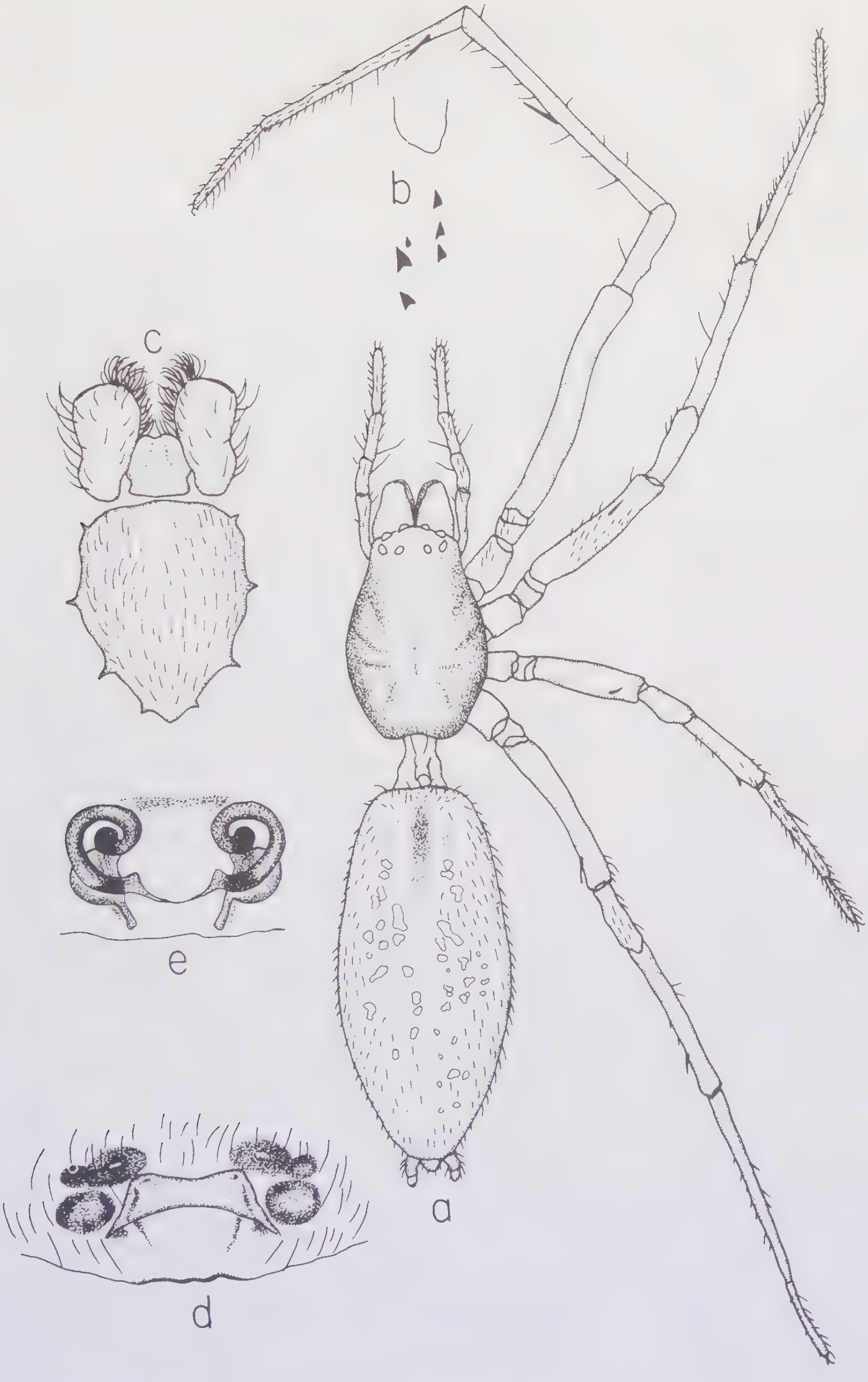

Fig. 96. Female *Cheiracanthium catindigae* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

lateral sides yellow and clothed with short fine white hairs. Basolateral one third of abdomen longitudinally rough and corrugated with five to seven striae. Anterior spinnerets close to each other basally but wide open apically with kidney-shaped structure on their tips. Posterior spinnerets much longer than the anterior, first segment cylindrical and longer than anterior spinnerets, second segment similarly cylindrical but small, with its diameter barely one half width of first segment. Epigynum ribbon-like with a broad anterior epigynal margin and spermathecae prominently along the lateral margins, posterior epigynal margin with three shallow indentions.

Etymology: Named after the collector, Miss J.L.A. Catindig.

Natural history: Handpicked from the panicle of Bermuda grass in July.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Caliraya, Mahipon Vill., holotype female, 17 July 1985, J.L. Catindig.

Distribution: Philippines.

Alaeho New Genus

Description: Carapace moderately attenuated in front, margins serrated except the attenuated sides of the cephalic and the posterior end of the thorax. Fovea present. Eight eyes in two transverse rows, all clear except PME slightly whitish. AE shorter than the straight PE, slightly recurved in dorsal view to slightly procurved when viewed in front. Eye diameter: PME > ALE > AME > PLE. Eye separation: PME–PLE > AME–AME > PME–PME > AME–ALE. ALE slightly elliptical and very close to AME. PME elliptical, anteriorly diverging and posteriorly converging. PLE and ALE far apart, separated by almost the height of clypeus. Median ocular quadrangle narrower in front than behind, length as long as posterior width. Clypeus height small, less than one AME diameter. Sternum longer than wide, punctated, anterior end moderately concave medially to receive the labium base, laterals extended in between coxae to the venter of carapace, posterior end broad and blunt in between coxae IV. Labium as long as wide, widest posteriorly and apical margin cleft in the middle, apical end beyond midlength of maxillae. Maxillae longer than wide, outer lateral margin not excavated to house pedipalp, distal border almost entirely with scopulae. Chelicerae small and robust, swollen dorsally in the middle, constricted in the posterior one third, promargin bears no teeth except scopulae, retromargin with three teeth. Legs moderately long and slender, tibia III and IV with zero to two ventral spines, metatarsi III and IV bear zero or one ventral spine. Tarsi two-clawed, each claw with three or four teeth, claw tuft club. Leg formula 4123. Pedipalp with a porrect and pointed retrolateral tibial apophysis, as long as diameter of tibia, with a very long dorsal and two promarginal spines below midlength, and membranous conductor and median apophysis very minute.

Abdomen depressed, dorsally and ventrally made up of shield-like plates (scutum) that terminate before the end of the abdomen, separated laterally or lateroventrally by a narrow membranous membrane. Anterior end of abdomen with a circular sclerotized structure housing the pedicel. Spinnerets all visible ventrally, anterior pair separated from each other basally by about one third diameter of spinneret. Posterior spinneret more cylindrical than the anterior pair and far apart, separated by one length of each spinneret.

Type species: *Alaeho linoi* n. sp.

Etymology: Derived from the expression of the collector in masculine form.

Alaeho linoi new species

(Fig. 97a–d)

Description:

Male: Total length 4.00 mm. Cephalothorax 1.75 mm long, 1.40 mm wide, 0.90 mm high. Abdomen 2.25 mm long, 1.28 mm wide, 1.00 mm high. Cephalothorax reddish brown, moderately attenuated anteriorly, serrated laterally except the posterior end. Eight eyes in two transverse rows, all clear except the slightly whitish PME. AE shorter than the straight PE, slightly recurved dorsally to slightly procurved when viewed frontally, ALE moderately elliptical like PME and very close to AME. Eye diameter (mm): PME = 0.13, ALE = 0.12, AME = 0.11, PLE = 0.10. Eye separation: AME–AME 0.4 times eye diameter, AME–ALE one eleventh of one AME diameter, PME–PME one third AME diameter, PME–PLE one half AME diameter, ALE–PLE 0.7 times AME diameter. Median ocular quadrangle narrower in front than behind, length as long as posterior width. Clypeus height small, 0.7 times AME diameter. Sternum same color as cephalothorax, punctate with lateral margins between coxae extended to the venter of carapace, midanterior margin with a wide concavity for the base of labium, posterior end broadly blunt between coxae IV. Labium as long as wide, broadest basally, and distal end with a median cleft. Maxillae same color as labium and sternum, longer than wide, outer lateral margin not excavated for the pedipalp, distal end almost entirely occupied by the scopulae. Chelicerae reddish to reddish brown, midhalf swollen dorsally/frontally and constricted basally. Promargin bears no teeth except scopulae. Retromargin with three teeth. Legs relatively long and slender, light reddish brown becoming brown-yellowish in the metatarsi and tarsi. Spination in femora I = 0-0-1-0, II = 0-0-0-0, III = 1-1-0-0, IV = 1-0-0-0, tibiae I = II = 0-0-0-0, III = 0-0/2-1-0, IV = 0-0/2-0-0; metatarsi I = II = 0-0-0-0, III = 0-0/1-1-0, IV = 0-0/1-0-0. Metatarsus I/tarsus I = 1.26. Tarsi two-clawed, each claw with zero to four teeth, claw tuft clubbed. Leg formula 4123. Pedipalp longer than combined length of femora II and patella II, retrolateral tibial apophysis porrect and sharp with its length as long as tibial diameter, tibial promargin with two long setae and a dorsal one. Membranous conductor short, similar to the median apophysis.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.75	1.30	1.20	0.95	5.70
2	1.25	0.60	1.05	0.93	0.78	4.61
3	1.10	0.45	0.80	0.90	0.73	3.98
4	1.80	0.70	1.45	1.65	0.95	6.55
Pedipalp	0.60	0.35	0.39	–	0.60	1.94

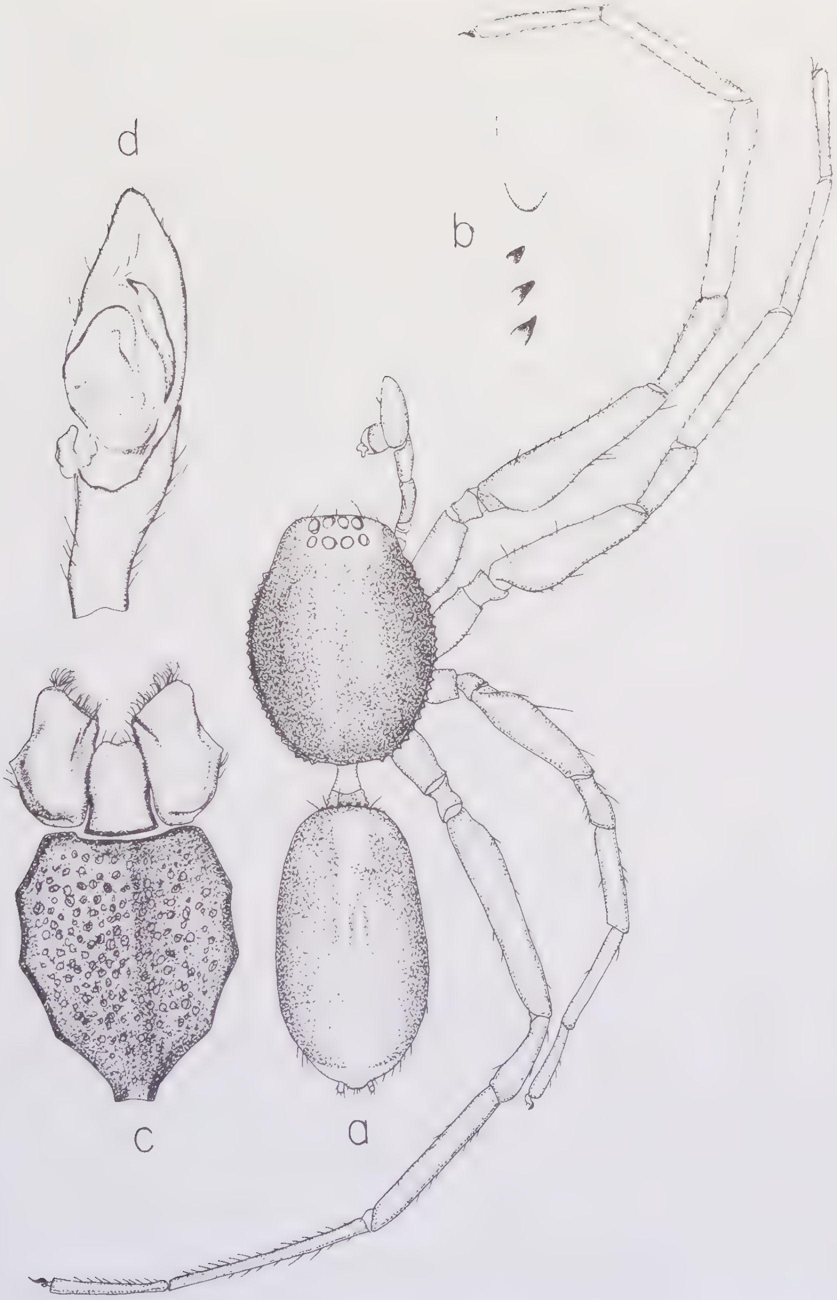

Fig. 97. Male *Alaeho linoi* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of palp (d).

Abdomen flattened, dorsal and ventral with shield-like plates (scutum) separated laterally by a membranous layer extended circularly around the spinnerets. Epigastric growth and book lung opening very prominent. Posterior spinnerets more robust than the anterior pair, separated basally by one third its diameter. Median spinnerets visible ventrally. Anterior spinnerets far apart, the distance in between as long as one anterior spinneret.

Etymology: Dedicated to the collector Mr Lino Calces, one of our former collaborators, in slash-and-burn upland rice in Siniloan, Laguna.

Natural history: Handpicked from fallen decaying bark of a log stump in the middle of an Azucena ricefield in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 22 August 1984, Lino Calces.

Distribution: Philippines.

Genus *Castianeira* Keyserling

Castianeira Keyserling, 1879. Verh. Zool. Bot. Ges. Wien.: 335.

Thargalia Karsch, 1880. Zeit. f.d. Ges. Natur. 53: 374.
Tylophora Simon, 1887. Ann. Soc. Ent. Fr.: 377.
Geotrocha Emerton, 1890. Trans. Conn. Acad. Arts Sci. 8: 4.
Castianeira Comstock, 1940. The Spider Book. New York: 592.

Medium-sized (4–8 mm long) clubionids with elongated ant-like bodies and moderately long and thin legs. The members of the genus are easily recognized by the heavily sclerotized, sometimes shiny carapace and abdomen; carapace elongate ovoid, bulging and highest along fovea dark brown to reddish black, darker in eye area; small eyes uniform in size, in two transverse rows with AE recurved, AME closer to laterals than to each other, PE distinctly procurved and longer than AE; chelicerae moderately long, robust, and hirsute, with two promarginal and two (sometimes three) retromarginal teeth; outer laterals of maxillae convex and not constricted; legs long and slender, usually orange to dark brown or black, possessing short dense claw tufts and thin scopulae; trochanter IV with prominent apicoventral notch; femur I with two or three dorsal spines, one or two prolaterals, metatarsus I with four ventral spines in two pairs. Abdomen elongated, ovoid to slender, with transverse bands of white scale-like setae and large shiny dorsal epigastric and ventral scuta (reduced in females), lacks cluster of long erect setae at anterior end; femur and patella of male palpus without apophysis; tibia with strong retrolateroventral ridge bearing one or more small teeth; cymbium basally rounded, long and slender distally; tegulum like cymbium but enclosing two loops of seminal duct within base; embolus long and slender, straight, spirally twisted apically, emanating directly from elongated tip; epigynum with rounded convex hairy plate, copulatory openings small, round, elliptical and slit-like, well separated, distinct, and often linked by shallow grooves; spermathecae longer than wide, touching midline, rugose, and commonly with slender posterior part quite close to the anterior of genital groove.

These spiders are common in leaf litter in shady environments, some associated with ants.

Castianeira tiranglupa new species

(Fig. 98a–f)

Description:
Male: Total length 7.50 mm. Cephalothorax 3.50 mm long, 2.05 mm wide, 1.63 mm high. Abdomen 4.00 mm long, 1.90 mm wide, 2.08 mm high. Cephalothorax reddish brown except black longitudinal fovea and inner part of eye area and margins, widest between coxae II and III and moderately narrow toward both ends. Lateral margins of the cephalic area almost straight and not much higher than the posterior end of the thoracic area, with a truncated end. Eye area and vicinity with long hairs. Eight eyes in two rows, AE moderately recurved and PE slightly procurved to straight. Eye diameter (mm): AME = 0.16, ALE = 0.15, PME = PLE = 0.13. Eye separation: AME–AME 0.8 eye diameter, AME–ALE 0.40 AME diameter, PME–PME 1.25 AME diameter, PME–PLE as long as one PME or 0.80 AME diameter. Median ocular quadrangle wider than long, anterior part a little narrower than the posterior part. Clypeus height moderately large, 1.25 times AME diameter. Sternum same color as cephalothorax, longer than wide, hirsute and each hair arises from a shallow pit, anterior margin with a truncated notch below labium, posterior end narrows to a blunt point. Labium broadest at midhalf, apical one fourth yellow, distal margin truncated. Maxillae reddish brown except yellow base of scopulae, longer than wide. Chelicerae short and robust, promargin with three teeth and scopulae, retromargin with two teeth of equal size. Legs long and slender, brown with reddish brown femora I–IV and leg IV except tarsi. Spination in femora I = 3-0-2-0 II = 3-0-2-0, III = 3-0-3-2, and IV = 3-0-3-1; tibia I = 1-6-0-0, II = 1-6-1-0, III = 1-5-2-2, and IV = 1-6-2-2. metatarsi I = 0-4-0-0, II = 0-4-0-0, III = 0-5-2-3, and IV = 0-5-3-3. Dorsal spines of patella very weak, similar to dorsal spines in tibia I and II. Leg formula 4123. Pedipalp same color as patellae I and II, about as long as femora I, tibiae with two long promarginal spines, embolus spiral and partly hooked, ejaculatory duct with two opposing basal loops, paracymbium very minute.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.55	0.83	2.40	2.00	1.35	9.13
2	2.45	0.88	2.30	1.80	1.25	8.68
3	2.10	0.83	2.00	1.90	0.90	7.73
4	3.20	0.88	2.80	3.35	1.30	11.53
Pedipalp	0.85	0.20	0.50	–	1.10	2.65

Abdomen highly sclerotized (scutum-like) except unsclerotized posterior end, same color as cephalothorax, anterior end narrow and cleft medially, posterior end tapers and broadest in the posterior one third. Venter slightly less scletorized than the dorsum. Anterior pair of spinnerets more robust than the posterior.

Etymology: Name derived from the habitat of the species in Tagalog.

Natural history: One male was found running on the ground in a slash-and-burn upland rice field in August.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 7 August 1984, A.T. Barrion.

Distribution: Philippines.

Genus *Agroeca* Westring

Agroeca Westring, 1861. Goteb. Kongl. Vet. Handl. 7: 311.

A moderately small group of clubionids with wide geographical distribution. These spiders have ovoid

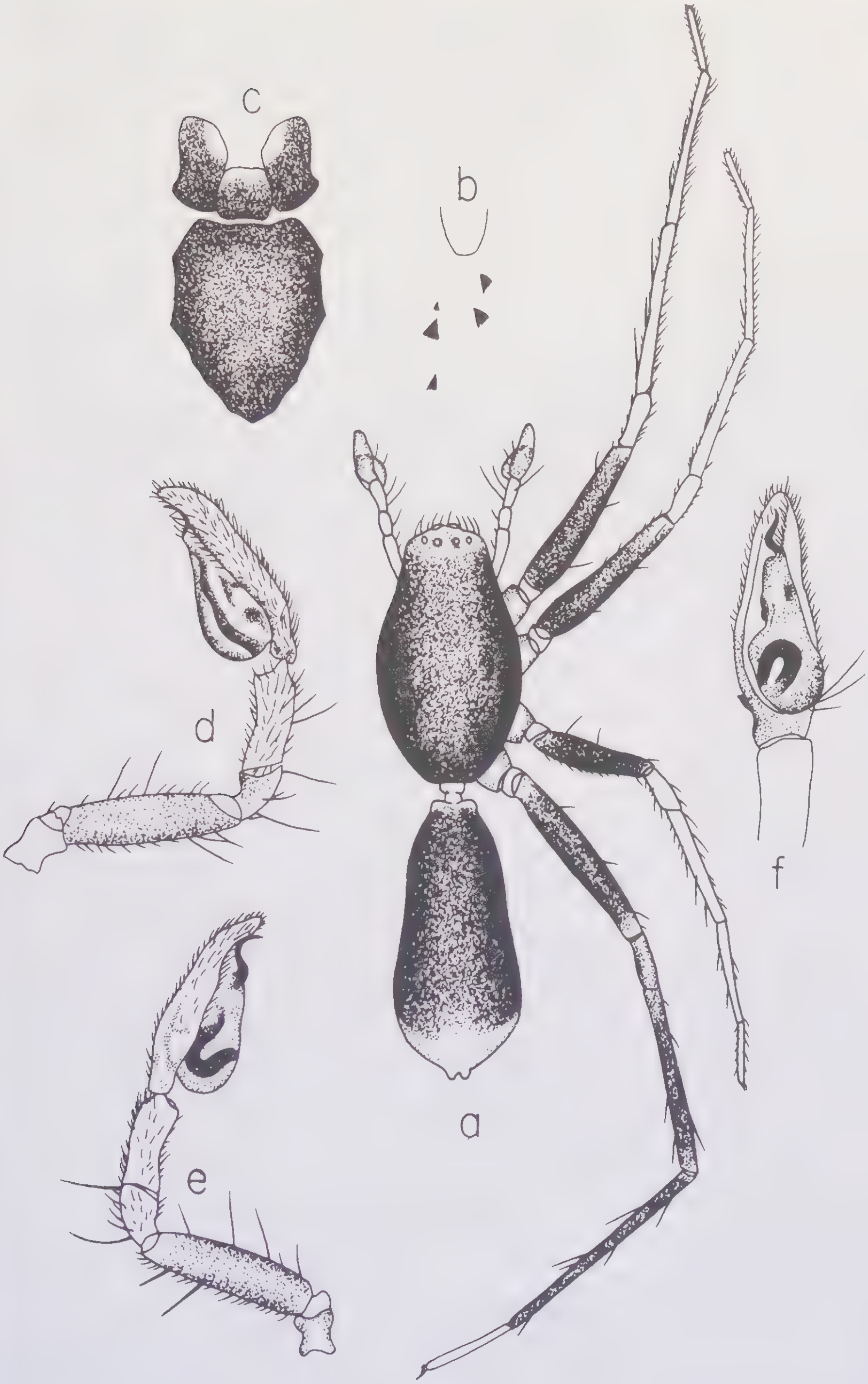

Fig. 98. Male *Castianeira tiranglupa* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and lateral (de) and ventral (f) views of pedipalp.

carapace, narrowed in front, bordered by a black marginal stripe; long thoracic groove with streaks radiating from this and widened out, sometimes forming loops producing characteristic patterns, and lighter submarginal lateral bands; eyes in two rows, compact and both procurved, AME smaller than ALE and posterior eyes almost equidistant; median ocular area (MOA) wider behind than in front; chelicerae moderately robust though short, two rows of teeth present and retromargin with two teeth; maxillae longer than wide, outer lateral sides straight without median constriction; labium almost as wide as long; leg formula 4123, tibia I with two pairs of ventral spines, metatarsi I and II with three pairs of ventral spines, the apical ones shorter and more laterally set; scopulae not well defined in smaller species, present in tarsi and extend to metatarsi; anterior spinnerets more robust than the posterior pair and relatively shorter.

Agroeca kltina new species
(Fig. 99a–e)

Description:
Female: Total length 5.85 mm. Cephalothorax 2.20 mm long, 1.90 mm wide, 1.40 mm high. Abdomen 3.65 mm long, 1.80 mm wide, 2.35 mm high. Cephalothorax chocolate-brown with a broad leaf-like or inverted umbrella-like band in the middle, eight yellow spots in the lateral margins (four on each side),and black eyes margins. Cephalic moderately attenuate and lateral sides almost parallel. Anterior part of the yellow band extended between PME. Thoracic area distinctly globular with a short black longitudinal fovea and a slightly cleft midposterior end. Eight eyes, all clear, in two rows, slightly recurved to straight, AE shorter than the procurved PE. Eye diameter (mm): AME = 0.20, ALE = PLE = PME = 0.15. Eye separation: AME–AME one half eye diameter, AME–ALE one fifth ALE or 0.15 AME diameter, PME–PME as long as one eye diameter, PME–PLE one half AME diameter. Median ocular quadrangle almost a square, front very slightly longer than behind, posterior width and length equal. Clypeus height small, 0.75 times AME diameter. Sternum yellow with yellow-brown hairs and brown margins, wider than long, with truncate anterior end and shortly pointed posterior end between coxae IV. Labium wider than long, brown with yellow distal end, subbasal area groove transverse. Maxillae same color as labium, longer than wide, outer lateral margins without indentions for the reception of pedipalps, inner lateral margins with a cavity, distal end with two or three thick sets of blackish yellow scopulae on a yellow base. Chelicerae moderately small and robust, attenuate apically, slightly swollen frontomedially, with a small boss. Promargin bears two teeth and scopulae anterior to the teeth and entire length of attenuation. Retromargin with five small teeth. Legs moderately long and slender, yellowish brown except dark brown to black femora I and II and apical one half of femora III and IV, black patches in patellae and posterior and subapical areas of tibiae I and II. Spination in femora I = 4-0-3-0, II = 3-0-2-0, III = 3-0-2-2, IV = 3-0-0-1, tibiae I = 0-16-0-0, II = 0-12-0-0, III = 0-15-1/2-2, IV = 0-4/5-2-2; metatarsi I = 0-4-0-0, II = 0-6-0-0, III = 0-5-0-1, IV = 0-5-2-2. Metatarsus I/tarsus I = 1.16. Tarsi two-clawed, each superior claw with five to seven teeth, claw tuft distinct and plumose apically. Leg formula 4132. Pedipalp yellow-brown with blackish femora, spination in femora = 2-5-1-0, patellae = 1-0-2-0, tibiae = 2-5-2-0, and tarsi = 0-1-1-0, single-clawed with ten teeth.

Abdomen elongate, yellow with irregular black to gray flecks and broad black to gray bands on each side of the cardiac area. Venter of abdomen with a W-shaped brownish gray band from epigastric furrow to the sclerotized posterior spiracle. Epigynum moderately bulbous, reddish brown with yellow margins, narrow and deep posterior cleft and shallow anterior notch. Spinnerets visible dorsally, all segment II yellow in all pairs, anterior pair wide basally and slightly separated from each other, posterior pair more wide apart and cylindrical.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.20	0.70	2.30	1.68	1.45	8.33
2	1.80	0.65	1.85	1.60	1.33	7.23
3	1.90	0.65	1.90	1.88	1.05	7.38
4	2.38	0.70	2.30	2.60	1.15	9.13
Pedipalp	1.08	0.50	1.00	–	1.25	3.83

Etymology: The name was derived from the acronym of the collecting method, kerosene light trap (KLT).
Natural history: A single female was collected from KLT in June.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon, Real, Llavac Vill., holotype female, 14 June 1985, A.T. Barrion.
Distribution: Philippines.

Genus *Phrurolithus* C.L. Koch

Phrurolithus C.L. Koch, 1839. Die Arachniden 6: 105.

The genus *Phrurolithus* closely resembles *Castianeira*; however, the former has uniformly colored carapace, ranging from dark shiny chestnut to black, without conspicuous contrasting markings. Also, the AE row is slightly shorter than PE row, AME not larger than ALE, and posterior eye row either straight or slightly procurved. Carapace sharply narrowed in the cephalic region. Tibial apophysis in the male pedipalp bears two distinct prongs, fused basally, and the femur has a small but conspicuous apophysis ventrally, set with stiff hairs either at the middle or at proximal end.

Abdomen of males and females provided with dorsal scutum.

Phrurolithus ulopatulisus new species
(Figs 100a–i, 101a–e)

Description:
Female: Total length 4.35 mm. Cephalothorax 1.85 mm long, 1.35 mm wide, 1.00 mm high. Abdomen 2.50 mm long, 1.20 mm wide, 1.40 mm high. Cephalothorax dark reddish brown with shallow pits, widest above coxae II, cephalic anterior lateral margins almost straight and with a snout anterior to the AME, posterior end of the cephalothorax truncate. Fovea longitudinally short. Eight eyes, all clear, in two rows, AE more procurved than PE. Eye diameter (mm): AME = 0.13, ALE = PME = 0.10, PLE = 0.08. Eye separation: AME–AME one sixth shorter than one AME diameter, AME–ALE as long as one half ALE diameter, PME–PME 1.8 times

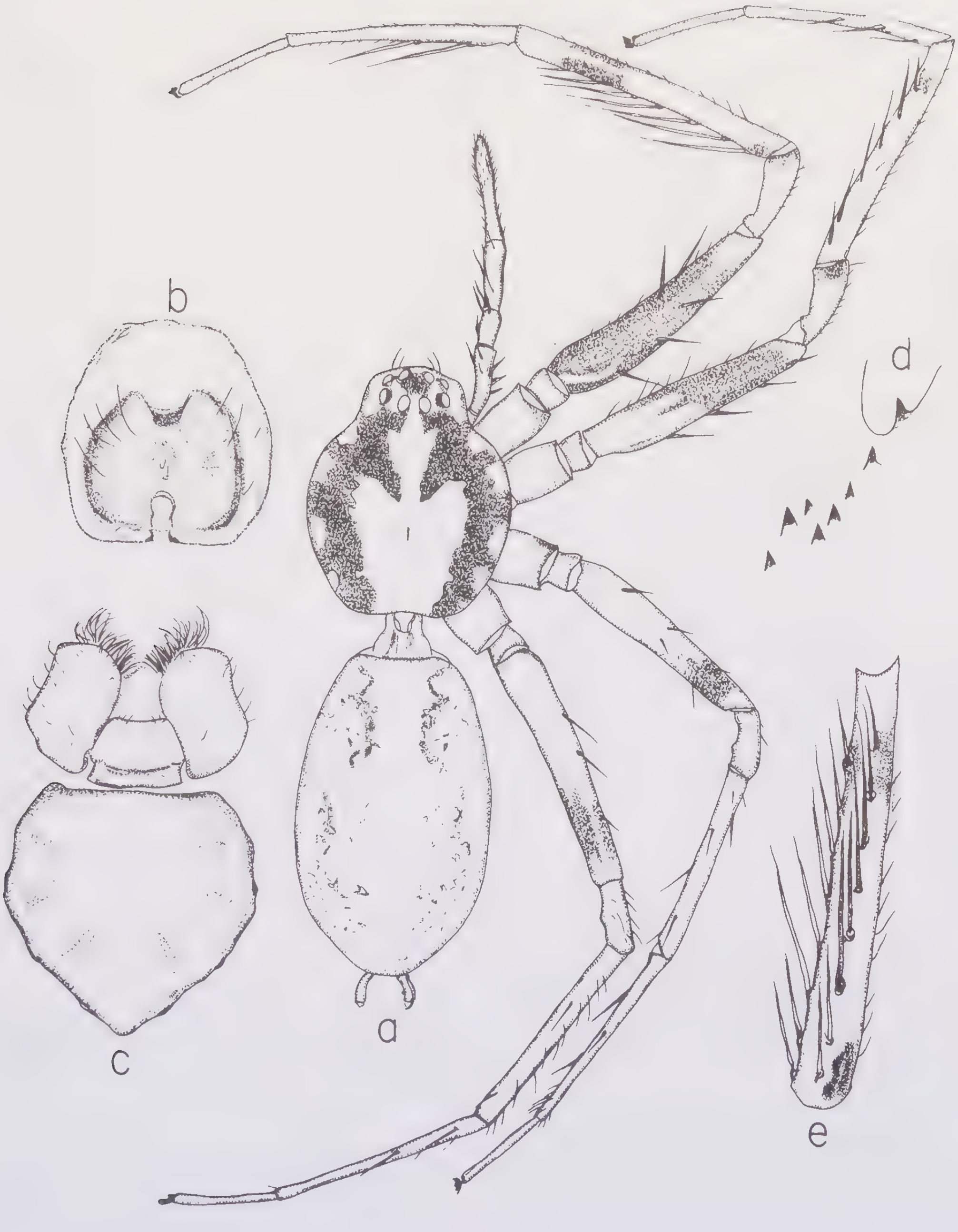

Fig. 99. Female *Agroeca kltina* n. sp. (a); epigynum (b); sternum, labium, and maxillae (c); cheliceral teeth (d); and ventral tibia I (e).

PME or 1.4 times AME diameter, PME–PLE as long as one AME diameter, ALE–PLE as long as one ALE diameter. Median ocular quadrangle narrower in front than behind, length shorter than the anterior width. Clypeus height large, nearly twice AME diameter. Sternum same color as cephalothorax, coxae, labium, and endites, anterior margin broadly cleft in the middle for the reception of the labium, lateral margins strongly concave for the coxae and extended to the base of carapace in between coxae, posterior end widely extended beyond coxae IV, producing a tube encircling the pedicel. Labium longer than wide, above midlength of maxillae constricted laterally below midhalf, apical end slightly concave at the middle. Maxillae long without concave depression to receive base of pedipalp, brownish yellow scopulae borne in the yellowish apical end. Chelicerae reddish brown, short and robust with boss-like dorsosubbasal swelling, promargin with four teeth and retro-

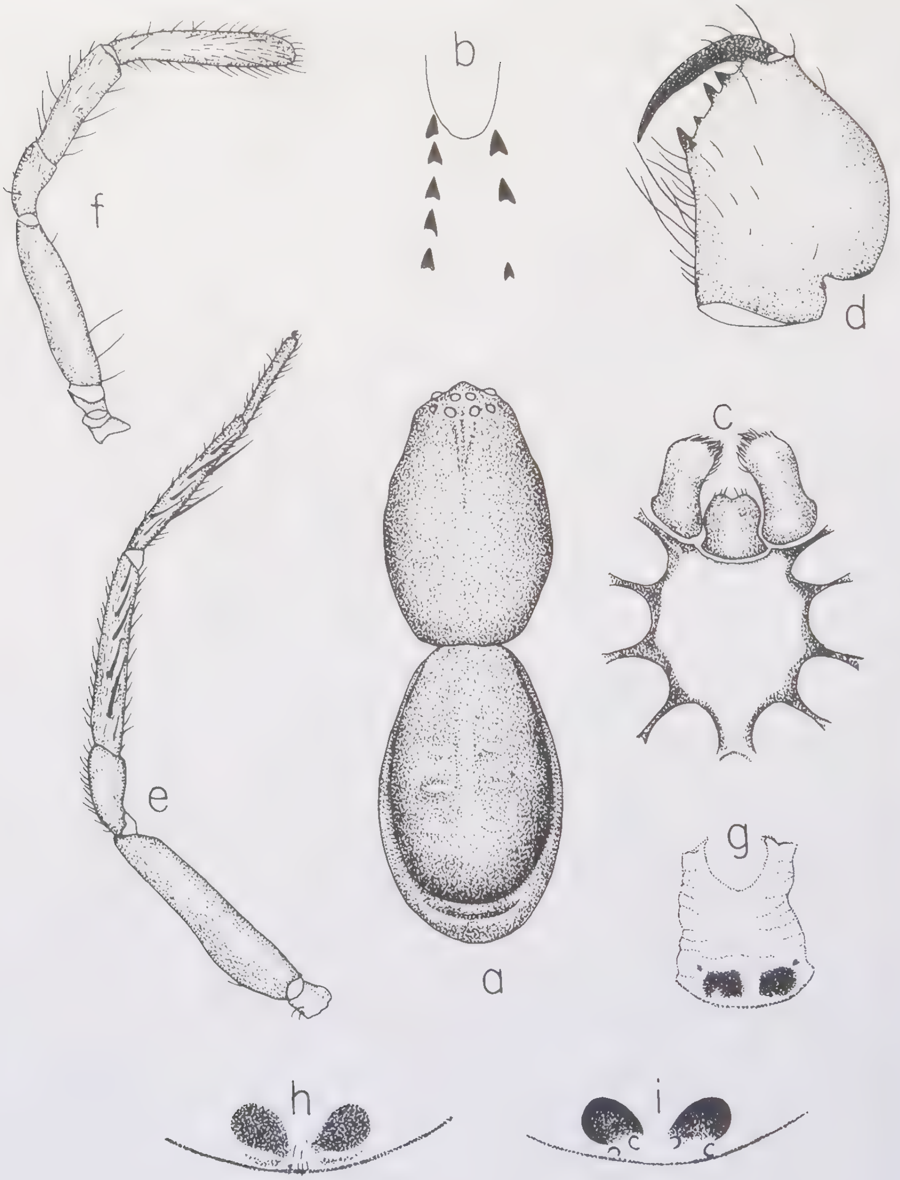

Fig. 100. Female *Phrurolithus ulopatulisus* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); chelicera (d); leg I (e); pedipalp (f); and dorsal (g) and ventral (hi) views of epigynum.

margin with three teeth, all larger than those in the promargin. Legs moderately long and slender, light reddish brown, subbase of femora slightly swollen posteriorly with a spine dorsally. Spination in the femora I = 1-0-1-0, II = III = IV = 1-0-0-0; tibiae I = 0-13-0-0, II = 0-7-4-3, III = 0-2-0-2, IV = 0-0-2-2, metatarsi I = 0-12-0-0, II = 0-5-3-0, III = 0-2-0-0, IV = 0-0-2-2. Metatarsus I/tarsus I = 1.60. Tarsi two-clawed, each claw with four equally spaced teeth. Claw tuft present, split in two rows when smashed, apices of hair tuft moderately clubbed. Leg formula 4123. Pedipalp a little shorter than total length of femora and patella of leg I, and femora with four long ventral setae.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.58	1.55	1.10	0.70	5.43
2	1.25	0.55	1.10	0.90	0.68	4.48
3	1.00	0.50	0.85	1.00	0.60	3.95
4	1.55	0.60	1.45	1.50	0.65	5.75
Pedipalp	0.65	0.30	0.43	–	0.65	2.03

Abdomen longer than wide, dorsum forms a hard sclerotized plate but membranous anterior to anal tubercle, venter sclerotized in the anterior one half along the epigynal area and with a pair of large half-moon-shaped sclerotized plates posterior to the epigastric furrow. Apical one third of abdomen overhangs the cephalothorax. Rest of the abdominal venter and laterals membranous. Spinnerets yellowish brown, anterior pair almost contiguous and relatively longer and stouter than the posterior pair. Epigynum a sclerotized subrectangular plate with a deep cleft in the anterior margin and a pair of globular spots (shadow of spermathecae) dorsad of the epigastric furrow. Spermathecae sacs globular, oblique, and diverging. Fertilization tube about one half the diameter of spermathecae, upcurved and diverging.

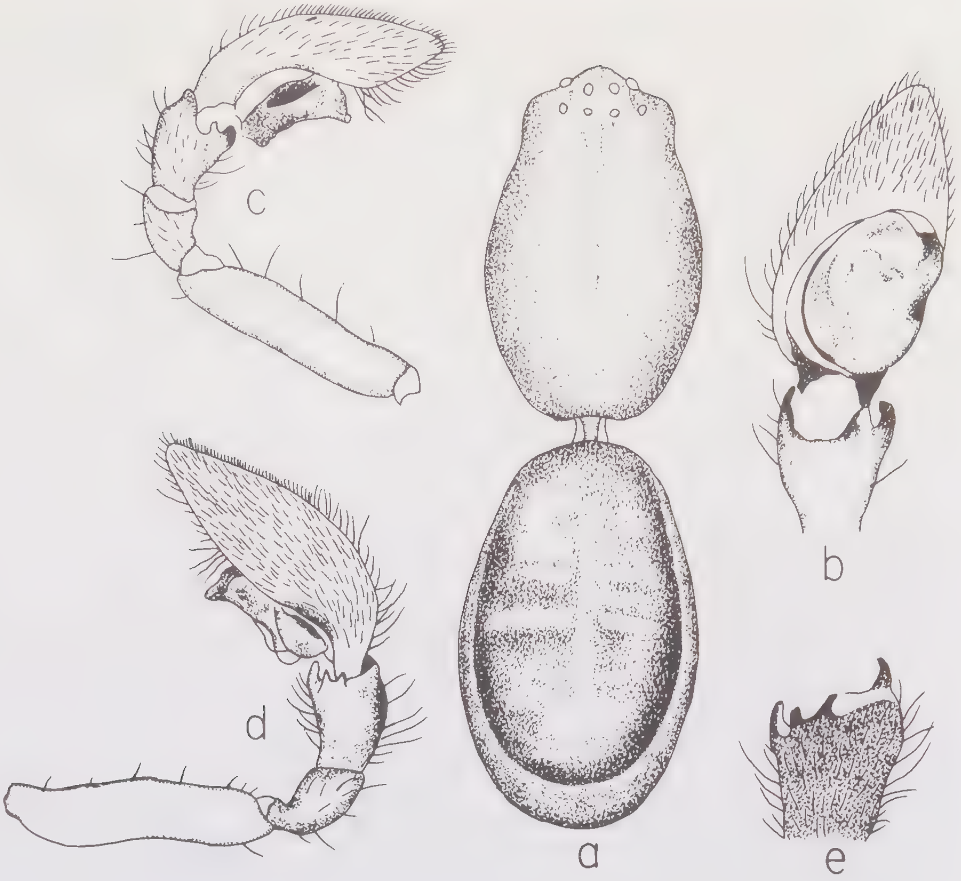

Fig. 101. Male *Phrurolithus ulopatulisus* n. sp. (a); ventral (b) and lateral (cd) views of pedipalps; and tibial apophysis (e).

Male: Total length 4.25 mm. Cephalothorax 2.00 mm long, 1.45 mm wide, 1.35 mm high. Abdomen 2.25 mm long, 1.38 mm wide, 0.91 mm high. Cephalothorax similar to the female except for a more pronounced black longitudinal fovea, rougher surfaces, and truncate posterior end. Eight eyes in two rows, all clear except PME. AE shorter than PE, straight to slightly procurved. PE more procurved than AE. Eye diameter (mm): AME = 0.13, ALE = 0.10, PME = 0.09, PLE = 0.08. Eye separation: AME–AME 0.8 eye diameter, AME–ALE 0.60 AME diameter, PME–PME 1.2 times AME or 1.7 times PME diameter, PME–PLE as long as AME separation, ALE–PLE as long as one PME diameter. Median ocular quadrangle wider than long, anterior and posterior width similar in length. Clypeus height large, 2.7 times AME diameter. Sternum, labium, maxillae, and chelicerae as in the female. Legs brownish red except blackish gray patches in the apical one half of femora. Spination in femora I = 1-0-0-0, II = 1-0-1-0, III = 0-0-0-0, IV = 1-0-0-0; tibiae I = 0-7-5-0, II = 0-15-0-0, III = 0-3-0-2, IV = 0-4-0-1; metatarsi I = 0-3-4-0, II = 0-10-0-0, III = 0-1-0-2, IV = 0-2-0-1. Metatarsus I/tarsus I = 1.67. Tarsi two-clawed, each claw with four teeth. Claw tuft in two rows between claws, each hair with a clubbed apex. Leg formula 1423. Pedipalp as long as combined length of femur I and patella I, retrolateral tibial apophysis with a black bidentate apophysis on its side, embolus long and thread-like, conductor forms an L-shaped sclerotized structure with a pointed tip in retrolateral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.65	1.65	1.70	1.50	0.90	6.40
2	1.40	0.60	1.25	1.18	0.63	5.06
3	1.10	0.50	0.90	1.10	0.60	4.20
4	1.70	0.55	1.65	1.70	0.75	6.35
Pedipalp	0.80	0.30	0.34	–	0.85	2.29

Abdomen blackish with three pairs of ovate faint brown dorsal spots, longer than wide and strongly convex, anterior one third roughly punctated compared to the posterior two thirds. Venter with two sclerotized plates separated by a narrow membranous membrane subposteriorly, genital groove with a transparent orifice-like structure in the middle of the two book lung openings. Spinnerets with a membranous margin, anterior pair close to each other and longer than wide.

Etymology: Named after the snout-like cephalic area in Tagalog.

Natural history: Three females and a male were collected from a pitfall trap set adjacent to upland rice and dipterocarp forest in August and October.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 24 October 1984, A.T. Barrion; two females, and one male paratype, 22 August 1984, same data as holotype. All are in bad state with legs and body separated from each other after examination.
Distribution: Philippines.

Genus *Scotinella* Banks

Scotinella Banks, 1911. Proc. Acad. Nat. Sci. Philad. 63: 442.

Scotinella is a small genus with approximately 15 nominal species, but generic revision could produce 35 or more species. They are small spiders, 1.75–3.10 mm long, with relatively ant-like appearance; cephalothorax ovoid, yellow-brown to pale gray, with black striae, highest at anterior end of dorsal groove, and surfaces bear minute pits; dorsal groove almost absent to shallow; eyes prominent and uniform in size, arranged in two transverse rows, AE straight with PE slightly procurved, PE ⩾ AE; chelicerae short and robust, often mottled black, promargin bears two or three minute teeth, similar to retromargin; maxillae as wide as long, convex along lateral margins. Legs yellow-orange to dark brown, slender with thin claw tufts and scopulae, femur I without dorsal spines but with two prolaterals, tibia I with five or six pairs of long overlapping ventral spines, metatarsus I with four pairs of long overlapping ventral setae, trochanter IV bears no ventral notch; abdomen ovoid, sometimes with pale chevrons, anterior end without cluster of setae, male abdomen with shiny dorsal scutum and with epigastric scutum; femur of female pedipalp with hooked structure ventrally, tibia longer than wide with a small ventral and a strong retrolateral apophysis; rounded tegulum without apophysis; embolus short, usually expanded at base and slender distally, emanating at distal end of tegulum; epigynum with elongated plate with prominent paired atrial depressions in anterior one half; copulatory tubes short to long, slender, arched laterad; spermathecae subglobular and set posterolateral to the copulatory openings.

Scotinella is best distinguished from its close allies by the unconstricted lateral margins of maxillae, AE row straight or nearly so, and presence of four ventral spines in metatarsus I.

Scotinella tinikitkita new species
(Fig. 102ab)

Description:
Female: Total length 3.10 mm. Cephalothorax 1.30 mm long, 1.10 mm wide, 0.80 mm high. Abdomen 1.80 mm long, 1.25 mm wide, 1.31 high. Cephalothorax red with blackish gray flecks, thin black eye margins, moderately attenuate apically except the anterior end of clypeus. Fovea black and longitudinal with three to five striae emanating from it. Eight eyes in two rows, all clear, straight AE shorter than the straight to slightly procurved PE. Eyes diameter (mm): AME = 0.09, ALE = PME = 0.08, PLE = 0.05. Eye separation: AE equidistant from each other, as long as 0.5 ALE but less than 0.5 AME diameter, ALE–PLE as long as one PLE diameter, PME–PME a little over one AME diameter, PME–PLE shorter than one AME but as long as one PME diameter. Median ocular quadrangle a little narrower in front than behind, posterior width equal to length. Clypeus height relatively large, 1.4 times AME diameter. Sternum reddish brown, longer than wide, and midanterior border with a truncated cavity for the base of labium, lateral margin between coxae extended to the venter of carapace, posterior end connected to the pedicel. Labium same color as maxillae and sternum, longer than wide, posterior end a little broader than the anterior end, with a median cleft. Maxillae longer than wide, retromarginal side constricted at midlength just above base of pedipalp, distal end with a whitish circular area bearing scopulae. Chelicerae small and robust, swollen after the constricted base a little below clypeus, promargin with three teeth in increasing size apically, and retromargin with seven small teeth. Legs relatively short, reddish becoming reddish to brown yellow in the metatarsi and tarsi, apex of tibia white. Ventral spination in tibiae I = 15 (seven pairs + one), II = ten (five pairs) and metatarsi I = ten (five pairs) and II = nine (four pairs + one). Metatarsus I/tarsus I = 2.22. Longest dorsal trichobothria in tibia III ca. one third tibial length, borne in its basal one third, in tibia IV at midlength and longer than one half of its length; in metatarsi III–IV borne above its midlength and as long as one third metatarsal length; in tarsi III at the middle, equal to one half of tarsal length, tarsus IV anterior to midhalf and about one third of tarsi. Tarsi two-clawed, each claw with two teeth. Tarsal claw tuft sparse. Leg formula 1423. Pedipalp as long as combined length of patella I and tibia I, venter of femur with four spines and dorsum of tibia with four posteriorly curved trichobothria.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.05	0.40	1.10	1.00	0.45	4.00
2	0.88	0.38	0.83	0.75	0.43	3.27
3	0.75	0.35	0.63	0.70	0.40	2.83
4	0.99	0.39	0.86	1.05	0.60	3.89
Pedipalp	0.44	0.20	0.33	–	0.53	1.50

Abdomen subglobular, reddish brown, scutum occupies more than one half abdominal dorsum, and the rest is membranous, extended laterally and ventrally, except epigynal area and around it. Spinnerets almost uniform in size, anterior pair slightly larger than the posterior. Epigynum lightly sclerotized in the middle

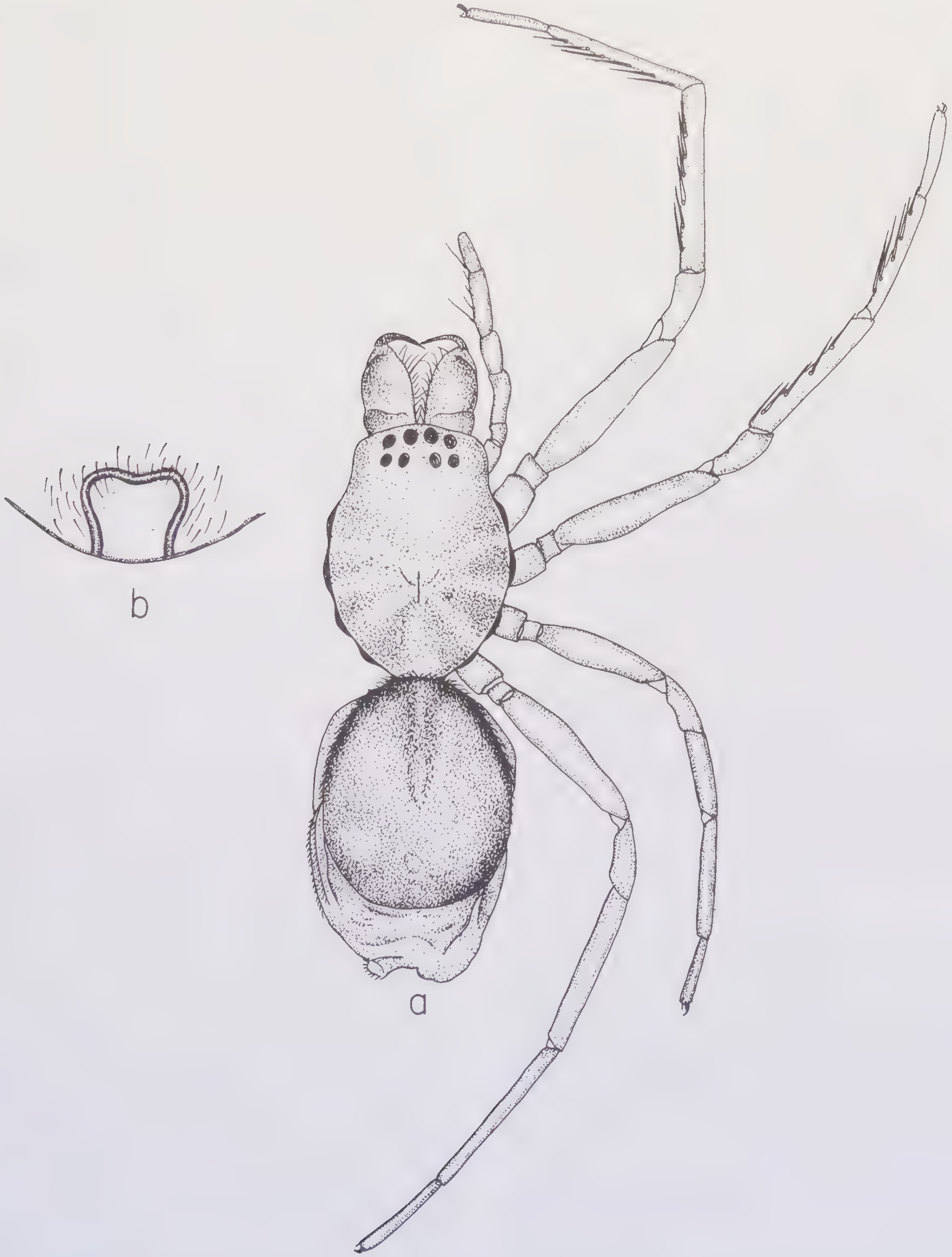

Fig. 102. Female *Scotinella tinikitkita* n. sp. (a); and epigynum (b).

except lateral margins, tooth-like with cleft distal end and small longitudinal slit posteriorly touching epigastric furrow.

Etymology: Named after the spine pattern in tibia and metatarsi in Tagalog: 'tinik' = spines and 'kitkit' = adheres closely to a surface.

Natural history: All three females were collected from kerosene light trap sample in April and July.

Material examined: PHILIPPINES: *Luzon Is*: Quezon Prov., Real, Llavac Vill., holotype female, 10 April 1984, R. Apostol, two female paratypes, 17 July 1984, A.T. Barrion, same data as holotype.

Distribution: Philippines.

FAMILY GNAPHOSIDAE POCOCK

(Running or Ground Spiders)

These are predominantly ground-dwelling spiders, nocturnal in habit, hunting by stealth. Size range from 4.0 to 5.5 mm. There are eight heterogenous eyes in two rows. The chelicerae each have a boss and scopula, the labium is longer than broad, and the trichobothria are numerous on the tibiae, one row on metatarsi, and two rows on the tarsi. The body is depressed dorsoventrally, the oval abdomen is similarly flattened, but not greatly larger than the carapace. The legs are tapered, and moderately short, spinose; their order of length from longest to shortest is IV, I, II, III. The tarsi have scopulae. The anterior spinnerets are cylindrical, longer and more heavily sclerotized than posterior, and separated from each other by a distance about equal to the diameter of one. Gnaphosids spin delicate silken sacs, within which they molt or mate.

KEY TO THE GNAPHOSID GENERA AND SPECIES

1 Fovea absent; cephalic area almost parallel-sided, anterior eye row moderately recurved and shorter than the slightly procurved to straight PE row; abdomen dark brown with two pairs of spherical spots (Fig. 103a); posterior end of sternum truncate (Fig. 103b); epigynum with an inverted U-shaped sclerotized part anteriorly and with a pair of subglobular spermathecae towards epigastric furrow (Fig. 103ef). .... *Micaria siniloana* n. sp. (Fig. 103a–f).

– Fovea present. 2

2 Metatarsi III with a ventroapical preening comb (Fig. 104a). 3

– Metatarsi III without a ventroapical preening comb. 4

3 Cephalothorax dark reddish brown and abdomen dull grayish brown (Fig. 104b); CL : CW = 1.5; CL : AbL = 0.52; metatarsus I : tarsus I = 1.13; metatarsus II bears two ventral spines; epigynum with a double wide V-shaped mark dorsad of the spherical spermathecae (Fig. 104c); male abdomen with six reddish brown spots posterior to the cardiac scutum area (Fig. 104d); RTA simple, porrect and apically pointed; embolus short. .... *Zelotes capiliae* n. sp. (Fig. 104a–d)

– Cephalothorax yellowish brown and abdomen yellowish gray (Fig. 105a); CL : CW = 1.2; CL : AbL = 0.47–0.66; metatarsus I : tarsus I = 1.16; metatarsus II without ventral spines; epigynum with an m-shaped mark anterior to the globular spermathecae (Fig. 105b); RTA simple, blunt apically in retrolateral view, reaching about one third of cymbium (Fig. 106fg), embolus long and coiled twice dorsad of tegulum (Fig. 106f). .... *Zelotes cavaleriei* Schenkel (Figs 105ab, 106a–g)

4 Abdomen with white bands or patches. 5

– Abdomen without white bands. 8

5 Tibia I without ventral spines, II with two ventral spines in female and one in male; tibia III with two median dorsal spines in female and three in the male; tibia IV without dorsal median spines; PLE > AME (Fig. 107a); promargin with three teeth and retromargin with one tooth; CL : CW = 1.27–1.33; AbL : AbW = 1.52–1.71; CL : AbL = 0.79–0.85; epigynum triangular with two ovoid orifices (Fig. 107d); spermathecae of unequal size (Fig. 107d); RTA long, reaching midlength of cymbium, blunt tip curved inwards (Fig. 107g–i) and embolus short. .... . *Poecilochroa dayamibrookiana* n. sp. (Fig. 107a–j)

– Tibia I with three or more ventral spines. 6

6 Tibia with six ventral spines except four in tibia III; AME > PME > ALE = PLE; CL : CW = 1.69, AbL : AbW = 2.05, CL : AbL = 0.90, metatarsus I : tarsus I = 2.06; promargin with three teeth and retromargin with two; epigynum with a black and heavily sclerotized subglobular structure between a pair of small spherical orifices anterior to epigastric furrow (Fig. 108e). .... *Poecilochroa otonensis* n. sp. (Fig. 108a–f)

– Tibia I with three ventral spines and II with two only. 7

7 Median ocular area with a black patch, abdomen with four spots moderately wide apart (Fig. 109a); sternum with a pair of oblong yellow spots (Fig. 109c); epigynum with a small half-moon-like unsclerotized area with a pair of small diverging orifices (Fig. 109g). .. .. *Poecilochroa alcala* n. sp. (Fig. 109a–h)

– Median ocular area without a black band (Figs. 110a, 111a); sternum without yellow spots (Figs. 110d, 111c); epigynum triangular-like with a small bell-shaped median hood, spermathecae oblong, unequal in size and parallel to each other (Fig. 110i) or equal in size but apices converging (Fig. 111e). *Poecilochroa parangunifascigera* n. sp. (Figs 110a–i, 111a–e)

8 Tibia IV with zero or one dorsal median spine; PME < AME or PME > AME, AME > ALE. 9

- Tibia IV with two dorsal median spines; AME black or yellowish brown with AE row slightly procurved and PE strongly procurved; cephalothorax brown and abdomen yellow with short brown hairs (Fig. 112a); epigynum simple, inverted V-shaped (Fig. 112c); male pedipalp yellow, RTA inconspicuous, hidden by the laterally swollen cymbium, embolus acutely pointed at tip (Fig. 113df); tibia bears a long dorsal spine, ventrolateral side with an L-shaped apophysis; and tegulum extended downward to tibia (Fig. 113df). .... *Geodrassus ellenae* n. sp. (Figs 112a–d, 113a–g)

9 Moderately large spiders, about 7 mm long; AME > ALE = PLE > PME, AME black (Fig. 114a); abdomen yellowish brown without striae posteriorly and laterally; tibia II with four (2-2) ventral spines; RTA short but broad with a minute tip (Fig. 114c). .... *Scotophaeus leoi* n. sp. (Fig. 114a–c)

- Small spiders barely 4 mm long; PME > AME = PLE > ALE, AME not black (Fig. 115a); abdomen with transverse striae posteriorly; tibia II with four (1-2-1) ventral spines and I with three (1-1-1); RTA triangularly pointed (Fig. 115de). .... *Scotophaeus cecileae* n. sp. (Fig. 115a–f)

Genus *Micaria* Westring

Micaria Westring, 1851. Goteborgs. K. Vetensk. -o. Vitterh. Samb. Handl. 2: 47.

The genus *Micaria* is characterized by the ovoid cephalothorax, slightly attenuated in the cephalic area, covered dorsally from the middorsum of thoracic area. Fovea absent. Eyes occupy about one half breadth of head. AE row strongly procurved, close to each other. AME smaller than laterals. Posterior eye row slightly longer than the anterior and procurved. PME oblong in shape, farther from each other than from adjacent laterals. Medians and laterals of the posterior eye row almost equal in size. Sternum ovoid, posterior end pointed and projecting a little between coxae IV, set a little apart. Chelicerae vertical, small with one minute retromarginal tooth. Legs moderately long, femora I and II thicker and darker colored than other segments, which are long and slender. Scopulae with double rows of evenly spaced, short, spatulate spines, extending to midpoint or to the base of metatarsi I and II in males, and on the tibiae in females. Abdomen longer than wide, and narrow. Anterior spinnerets set a little apart from each other, about as long as the posterior pair. Median spinnerets slightly shorter but slender.

Micaria siniloana new species
(Fig. 103a–f)

Description:
Female: Total length 4.36 mm. Carapace 2.12 mm long, 1.72 mm wide, 1.00 mm high. Abdomen 2.24 mm long, 1.36 mm wide, 1.00 mm high. Cephalothorax reddish brown, lateral margins finely serrated, ocular area dark brown, cephalic area almost parallel-sided, thoracic area wide and broadest above coxa II, striae present, with apical and proximal pairs prominent, fovea absent. Eight eyes in two rows, recurved AE row shorter (0.52 mm) than the lightly procurved or nearly straight PE row (0.60 mm). Eye diameters (mm): ALE 0.16, AME = PME 0.14, PLE 0.08. AME–AME separation four times ALE diameter. AME–ALE separation one eighth ALE and one seventh AME diameter. PME–PME separation nearly five times eye diameter. PME–PLE separation three fourths PLE diameter. Median ocular area slightly broader behind (0.30 mm) than in front (0.29 mm). Clypeus height 0.7 AME diameter. Sternum reddish brown, longer (1.38 mm) than wide (1.13 mm), margins more heavily sclerotized, apical end straight with a slight elevation medially, posterior end truncated, lateral margins with spur-like outgrowths opposite coxa and with extensions in between coxae I and II, spur only in between coxae III and IV, median area finely punctated. Labium same color as sternum and maxillae, as long as wide, basal end slightly recurved, basolateral one third indented, apical end cleft medially, and apicolateral one third dark yellow. Maxillae longer than wide, rather cylindrical, with basal one third slightly widened and elevated, base rebordered, inner distal end light yellow with scopulae. Chelicerae reddish brown, vertical, median one half swollen (as seen laterally), promargin with three teeth and retromargin with one tooth. Legs reddish brown, trochanters without notches, coxa III globular-like and as long as one half of coxa I, I and II spineless, III with spines – Spine formulae: tibiae 0-4(2-2-1)-0-0 and metatarsi 0-2-1-0 – except femora, patellae, and tarsi, tarsi two-clawed with three short blunt teeth in each claw and clubbed hairs in the claw tuft, leg formula (123) (without leg 4). In the immature, leg formula 4123.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.84	0.96	1.40	1.12	1.00	6.32
2	1.44	0.80	1.24	1.08	0.92	5.48
3	1.28	0.64	1.04	1.04	0.80	4.80

Abdomen ovoid, dark brown with yellow-brown spots, four globular sigillae, corrugated posteriorly and laterally, venter yellow, except dark brown posterior, with two recurved transverse ridges and a pair of longitudinal brown stripes medially. Spinnerets all yellow, small, and concealed beneath abdomen. Epigynum deeply concave medially and rimmed by black inverted U-shaped anterior and lateral margins, spermathecae ball-like, each with a club-shaped spermathecal apophysis.

Etymology: Named after type locality.

Natural history: *M. siniloana* were collected from a pitfall trap in a dibble-planted dryland rice field newly cleared within a dipterocarp forest in August.

Material examined: **PHILIPPINES:** *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype female and

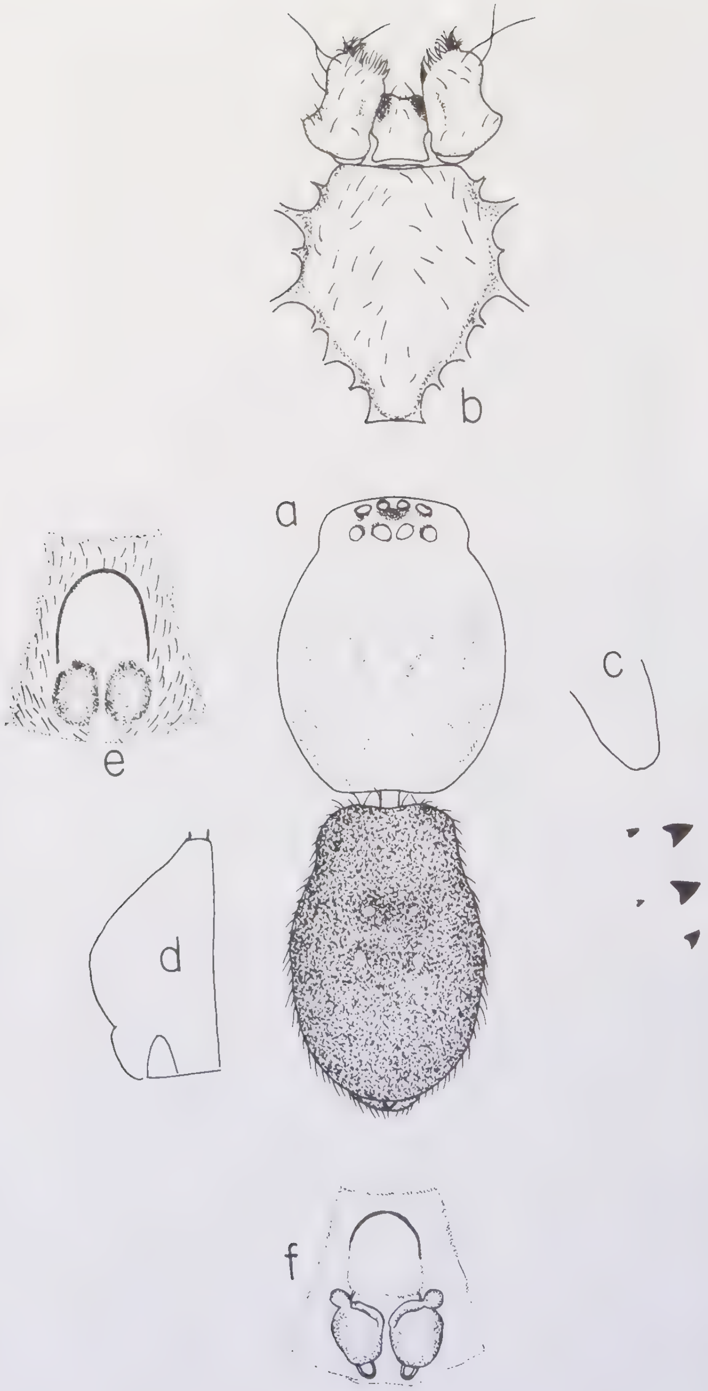

Fig. 103. Female *Micaria siniloana* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); left chelicera without fang (d); and dorsal (e) and ventral (f) views of epigynum.

paratype immature female, August 1984, A.T. Barrion.
Distribution: Philippines.

Genus *Zelotes* Gistel

Zelotes Gistel, 1848. Nat. Thierr.: ix.

Zelotes is a large and complex genus; however, it is easily recognized by the ovate cephalothorax, prominently narrowed in front and covered with fine hairs. Dorsum bears widening striae diverging from the short longitudinal fovea. Eyes closely grouped, posterior eye row a little longer than the anterior eye row. AE row slightly procurved viewed frontally, ALE larger than the AME. PE row straight, PME irregular in shape, sometimes larger than PLE and as far from adjacent PLE as from each other, or equally spaced. Chelicerae moderately strong, vertical, with hairs in the inner part of the promargin. Promarginal teeth vary from three to six, commonly three, and retromargin has two or three,

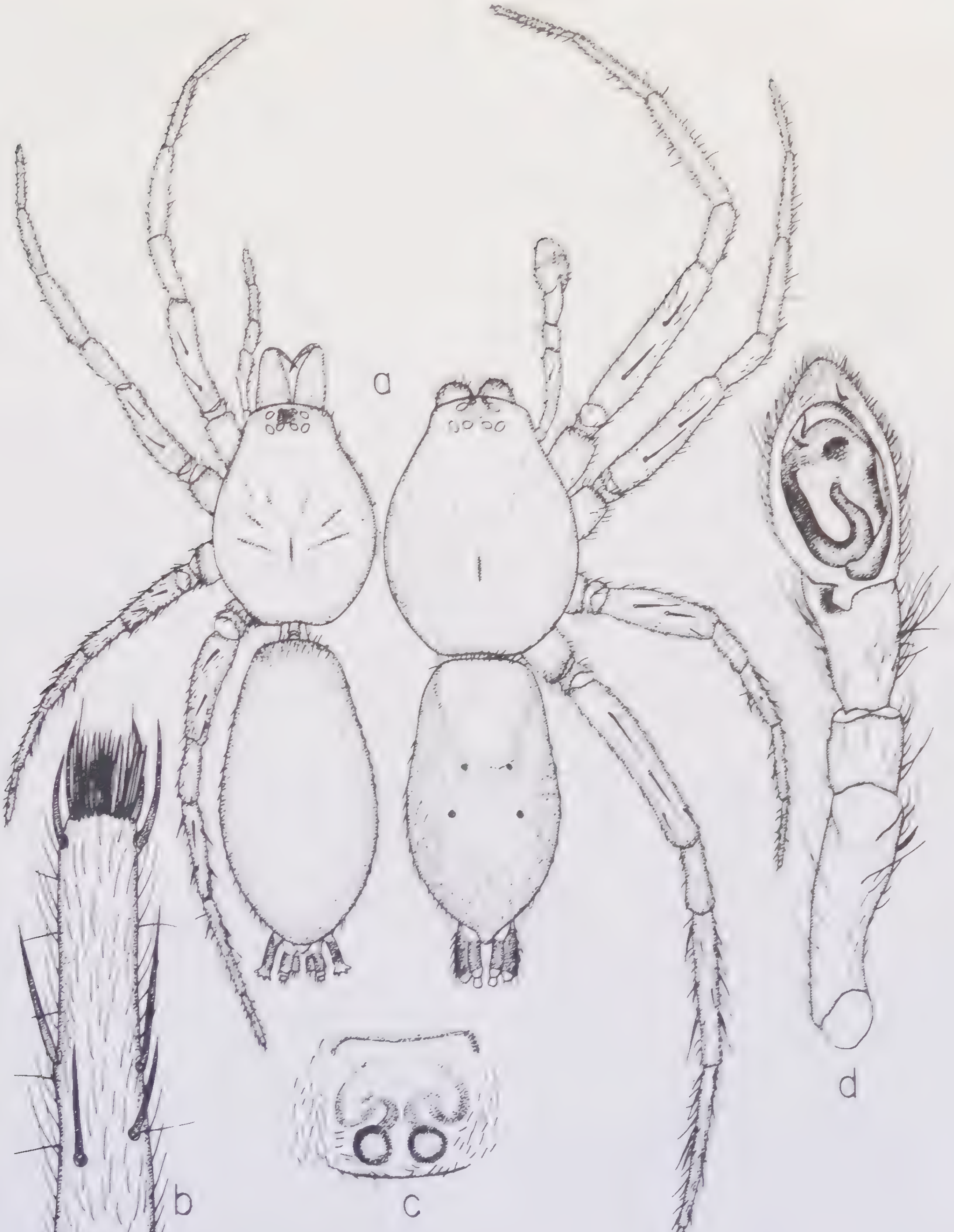

Fig. 104. Female *Zelotes capiliae* n. sp., without abdominal spots (left) and male with spots (right) (a); venter of tibia III (b); epigynum (c); and male pedipalp in ventral view (d).

occasionally one. Sternum ovoid, posterior end pointed between coxae IV. Legs moderately long, tibiae and metatarsi III and IV with or without ventral spines. Scopulae from midhalf to base of metatarsi I and II and to apices of metatarsi III and IV. Abdomen dark to black, covered with fine short hairs, and three pairs of spots or impressions dorsally.

These spiders are very agile and difficult to capture, building transparent, lustrous blue webs where they operate to catch potential prey.

Zelotes capiliae new species

(Fig. 104a–d)

Description:

Female: Total length 5.65 mm. Cephalothorax 2.15 mm long, 1.50 mm wide, 1.20 mm high. Abdomen 3.50 mm long, 1.65 mm wide, 1.70 mm high. Cephalothorax reddish brown with black fovea and striae running towards thoracic groove, broadest between coxae II and III and narrowed in the cephalic area. Eyes in two rows, slightly shorter AE recurved compared to the straight PE. Eye diameter (mm): PLE = ALE = PME = 0.10, AME = 0.08. AME closer to ALE than to each other. PE nearly subequal. Median ocular quadrangle very slightly wider behind than in front. Sternum yellowish brown to brown, subovate, very slightly longer than wide, anterior end straight to moderately recurved and posterior end rounded. Labium longer than wide, swollen medially and yellow apically. Maxillae same color as labium and sternum, median groove and posterior tubercle present, midlaterals on the outer side bulbous to pointed, apex rounded, with thin scopulae. Chelicera bears three promarginal and two retromarginal teeth. Legs reddish brown with slightly swollen femora. Spination: femora I and II with two dorsal and one prolaterodistal spines each, tibiae I and II with only the one (0-1-0) and three (1-1-1) ventral spines present, respectively, III and IV) with six (2-2-2) ventral and one dorsal spines each; metatarsi I and II with two ventral spines each. Leg formula 4123. Pedipalp as long as tibia II and metatarsus II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.65	0.75	1.25	0.95	0.85	5.45
2	1.50	0.65	1.10	1.00	0.80	5.05
3	1.30	0.60	0.90	1.05	0.70	4.55
4	1.60	0.90	1.50	1.70	0.90	6.60
Pedipalp	0.80	0.30	0.40	–	0.60	2.10

Abdomen grayish brown, oblongate dorsally, laterally, and ventrally, except the brownish red epigynum, broadest in posterior one half. Anterior pair of spinnerets dark brown basally and yellow apically with four spigots, posterior median pair short but robust. Epigynum with a transverse C-shaped sclerotized band and a transverse E-shaped plate between the C-band and spermathecae.

Male: Total length 5.20 mm. Cephalothorax 2.40 mm long, 1.80 mm wide, 1.00 mm high. Abdomen 2.80 mm long, 1.50 mm wide, 1.50 mm high. Similar to the female in appearance except size, dorsal scutum, and darker body coloration. Leg formula 4123. Tibiae I and II without dorsal and ventral spines. Metatarsi I and II with three each ventrally.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.80	1.00	1.40	1.20	1.10	6.50
2	1.65	0.90	1.20	1.10	0.80	5.65
3	1.40	0.75	0.95	1.00	0.75	4.85
4	2.00	1.10	1.60	1.95	1.00	7.65
Pedipalp	0.80	0.33	0.35	–	0.70	2.18

Abdomen with a dorsal scutum occupying anterior one third (ca. 0.38) of abdominal length and with two pairs of brown spherical sigilla, the apical pair at the bottom of scutum. RTA is a simple tooth projected anteriorly, short embolus coiled on top near cymbium's apex.

Etymology: Named after Ms Doddie Capili.

Natural history: All the specimems were isolated from kerosene light trap collections taken from July 1984 to February 1985, except one male and female pitfall trap-collected in January.

Material examined: PHILIPPINES: *Luzon Is*; Quezon Prov., Real, Llavac Vill., holotype female, 18 July 1984, R. Apostol and A.T. Barrion; one male paratype, 18 September 1984, A.T. Barrion, and two female paratypes, 4 February 1985, A.T. Barrion, same data as holotype; one male and one female, 17 January 1985, pitfall trap-collected, A.T. Barrion, same locality.

Distribution: Philippines.

Zelotes cavaleriei Schenkel

(Figs. 105ab, 106a–g)

Zelotes cavaleriei Schenkel, 1963. Mem. Mus. Natn. Nat. Hist. 25(1): 50.

Zelotes sp. Barrion, 1981. Grad. Sch. Univ. Philipp. Los Baños 1981: 91–93.

Description:

Female: Total length 4.12 mm. Cephalothorax 1.64 mm long, 1.36 mm wide, 0.64 mm high. Abdomen 2.48 mm long, 1.00 mm wide, 1.00 mm high. Cephalothorax yellowish brown, longer than wide, broadest at coxa III, raised between fovea and coxa III, posterior end indented, notch sparsely covered with small hairs. Eye region compact, surrounds black, AE row recurved and as long as slightly procurved PE row. Eye diameters PME > ALE < AME > PLE. AME separation one half AME diameter with a stout spine in between. AME–ALE nearly touching. PME the largest, elliptically shaped and diverging upward, separation one seventh PME diameter. Chelicerae yellow, sickle-shaped and pointed apically, bearing three retromarginal (two

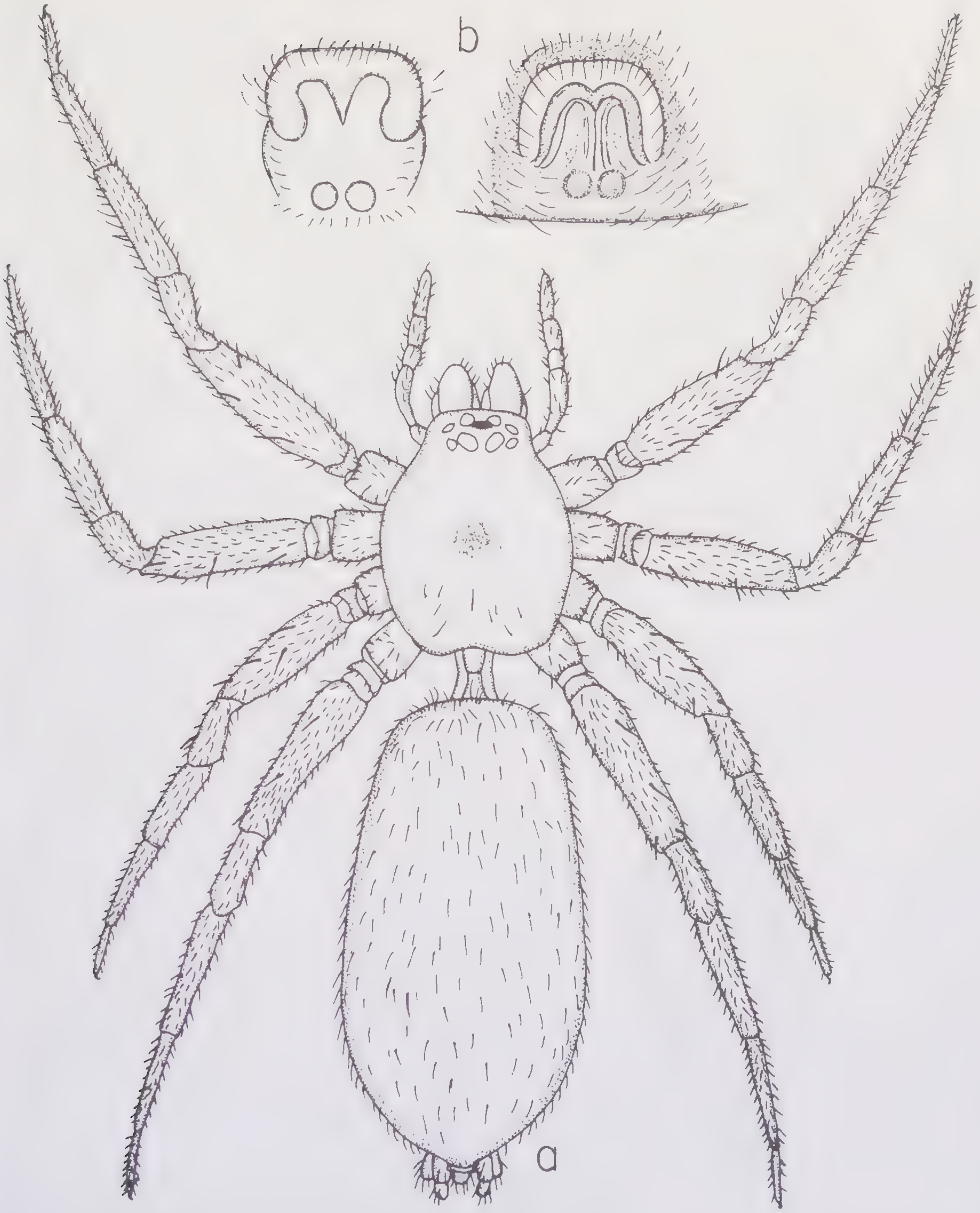

Fig. 105. Female *Zelotes cavaleriei* Schenkel (a); and epigynum (b).

large and one minute) and two promarginal (one normal and one tridentate) teeth. Sternum yellow-brown, oval, broader proximally and tapering distally, apical width twice larger than base of labium. Labium beyond apical one half of maxillae. Legs light brown, tibiae I–IV without dorsal spines, I and II without ventral spines and III and IV with six each; tibia IV spination = 0-6-3-4; metatarsi I and III with two ventral spines each and none on metatarsi II; metatarsus I : tarsus I = 1.16. Leg formula 4123.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.24	0.76	1.12	0.88	0.76	4.76
2	1.12	0.68	0.84	0.80	0.76	4.20
3	1.00	0.52	0.64	0.84	0.60	3.60
4	1.46	0.84	1.32	1.20	0.84	5.66

Labial palps yellow and clawed. Abdomen grayish yellow, twice longer than broad, elongated oval, covered with small short hairs dorsally, and uniformly light gray ventrally. Epigynum with a prominent M-shaped anterior epigynal margin, short midpiece as long as lateral epigynal margin.

Male: Very similar to female except smaller size. Total length 3.64 mm. Cephalothorax 1.44 mm long, 1.26 mm wide, 0.58 mm high. Abdomen 2.20 mm long, 0.84 mm wide, 0.88 mm high. Eyes in two rows with PE more recurved than AE row. Eye diameters (mm): PME = 0.15; AME = 0.11, ALE = PLE = 0.10. Tibiae III and IV without median dorsal spines, leg formula 4123. RTA as long as tibial diameters, tip blunt and curved outside in retrolateral view but moderately indented on the inside, then tapered to a point in ventrolateral view, reaches nearly one third cymbium length.

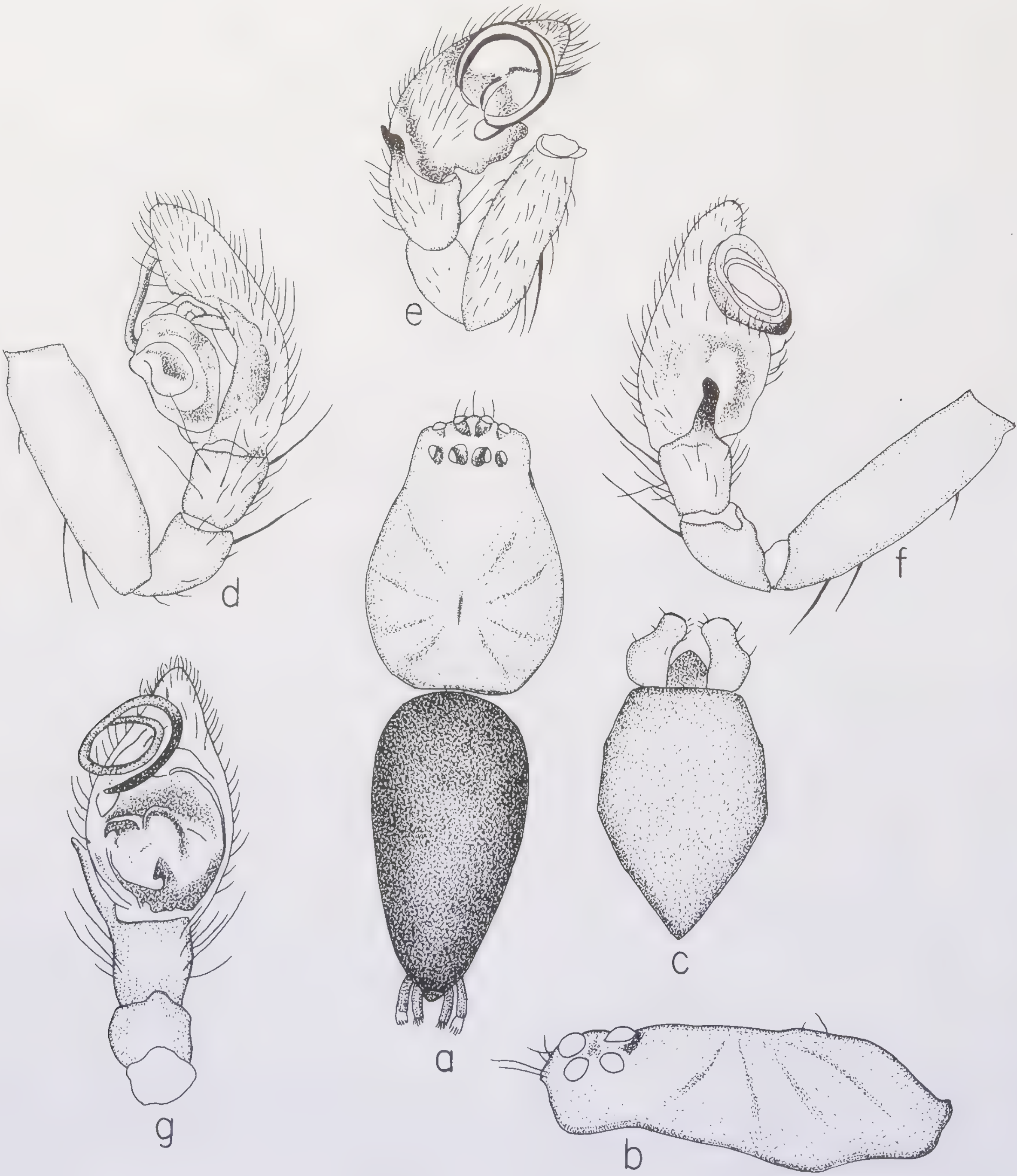

Fig. 106. Male *Zelotes cavaleriei* Schenkel (a); sternum, labium, and maxillae (b); side view of carapace (c); ventrolateral (de), retrolateral (f), and ventral (g) views of pedipalp.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.30	0.60	1.15	0.90	0.80	4.75
2	1.10	0.45	0.85	0.75	0.55	3.70
3	0.95	0.40	0.70	0.75	0.55	3.35
4	1.40	0.75	1.10	1.00	0.80	5.05
Pedipalp	0.63	0.20	0.20	–	0.55	1.58

Embolus long and coiled twice in apical concavity of cymbium with single spine before apex.

Variation: Females ranged 3.33–4.66 mm in length. AE of one female larger than PE and AME diameter subequal to PLE.

Natural history: Two males and two females were collected in July from pitfall traps installed in a secondary dipterocarp forest converted to slash-and-burn dryland rice. Another female was D-Vac-suctioned, also in July, from dryland rice.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Magsaysay Vill., two males and two females, 7 July 1984, A.T. Barrion; Liliw, Tuybaana Vill., one male, 23 July 1979, A.T. Barrion.

Distribution: China, Japan and the Philippines (new record).

Remarks: Male of *Z. cavaleriei* as recorded and described for the first time.

Genus *Poecilochroa* Westring

Poecilochroa Westring, 1874. Goteborgs. K. Vetensk.-o. Vittenk. Samh. Handl. 14: 45.

The cephalothorax of *Poecilochroa* is narrow to oblong, slightly convex, cephalic area slightly attenuate in front and broadest in the thoracic area dorsad of coxae II and III. AE close together in a straight line. Median ocular area longer than broad, narrower in front than behind. Chelicerae moderately small and without teeth in both promargin and retromargin. Abdomen with white spots.

Poecilochroa dayamibrookiana new species

(Fig. 107a–j)

Description:

Female (Fig. 107a–d): Total length 5.88 mm. Carapace 2.60 mm long, 2.04 mm wide, 1.44 mm high. Abdomen 3.28 mm long, 1.92 mm wide, 1.76 mm high. Cephalothorax reddish brown with fine gray to black hairs toward the margins, and short white hairs subdorsally, ocular area black including eye, fovea black with three striae radiating from it, yellow marginal spots above coxae II and III, posterior lateral margins of thorax each with a mass of ca. ten black hairs. Eight eyes in two rows, AE row strongly recurved but shorter (0.48 mm) than the slightly recurved PE row (0.62 mm), eye diameters (mm): PLE 0.11, PME = ALE 0.10, AME 0.08. AME separation just less than one AME diameter. AME nearly contiguous to ALE with a separation of 1.5 ALE diameter. PME–PME separation equal to one PLE diameter. PLE–PME separation one PME diameter. Clypeus height one ALE diameter. Sternum reddish brown, longer (1.24 mm) than wide (1.08 mm), lateral margins more hirsute than median and with spur-like extensions opposite each coxa, anterior end straight and posterior end slightly tapered. Labium same color as maxillae and sternum except the rounded yellow apical border, base straight. Maxillae longer than wide, irregularly rectangular with concave dorsomedian and outer lateral sides, inner laterals grooved longitudinally, basal ends elevated, setaceous, and diagonally narrowed towards the inner sides, distal end somewhat rounded with dark brown serrulae in the outer halves and light brown scopulae in the inner halves dorsad of the yellow spot, outer lateral margins lined with ca. ten laterally projected setae. Chelicerae reddish brown, stout medially and with three promarginal and one retromarginal teeth, second promarginal tooth largest. Legs brown with grayish brown femora, tibiae, metatarsi, and ends of patellae, tibial spination formulae I = 0-0-0-0, II = 0-2-0-0, III = 2-6(2-2-2)-22, IV = 0-5-2-0, patellae I to IV each with a dorsal long brown erect hair close to the distal end, ventral scopulae in metatarsi and tarsi I and II, metatarsi III and IV spinous, but spineless I, and II each with only one ventral spine, tarsi two-clawed with three to five teeth in each claw, leg formula 4213. Pedipalps reddish brown with two rows (five and three) of long erect brown setae, tarsi single-clawed with two teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.48	1.00	1.20	1.00	0.60	5.28
2	1.68	0.88	1.28	1.00	0.68	5.52
3	1.48	0.64	1.08	1.24	0.68	5.12
4	1.86	0.92	1.52	1.60	0.80	6.70
Pedipalp	0.76	0.36	0.44	–	0.64	2.20

Abdomen hirsute, grayish brown with pale white patches along cardiac area, three pairs of elongated sigillae, a pale white transverse band below third pair of sigillae, with five to eight U-shaped corrugations above anal tubercle, running dorsally to the laterals of abdomen, venter of abdomen grayish brown without pit-like patches and with two transverse pale white bands posteriorly. Spinnerets same color as tibiae, anterior spinnerets much wider apart and longer than the posterior pair, median pair intermediate. Epigynum triangular, posterior epigynal margins widely separated, anterior epigynal margin complete and connected to lateral epigynal margin, spermathecae bean-shaped and of unequal size.

Male (Fig. 107e–j): Total length 3.48 mm. Carapace 1.60 mm long, 1.20 mm wide, 0.84 mm high. Abdomen 1.88 mm long, 1.24 mm wide, 0.80 mm high. Cephalothorax brown with gray tinges laterally, convex, narrower anteriorly and wider posteriorly, broadest between coxae II and III, ocular area black, short brown fovea prominent, with a long U-shaped band above it running towards PLE, pale inverted V-shaped band proximal to fovea, with two rows of setae along each arm, and two pale striae on each side of fovea. Eight eyes in two rows, AE row strongly recurved and shorter (0.32 mm) than the slightly recurved to almost straight PE row (0.38 mm). Eye diameters (mm): PLE = ALE = 0.10, AME = PME = 0.08, AME–AME separation 0.6 AME diameter, AME–ALE separation one eighth AME diameter. PME–PME separation three fourths PME diameter. PME–PLE separation one half PME diameter. Clypeus height nearly one half AME or one third ALE diameter. Sternum, labium, and maxillae as in

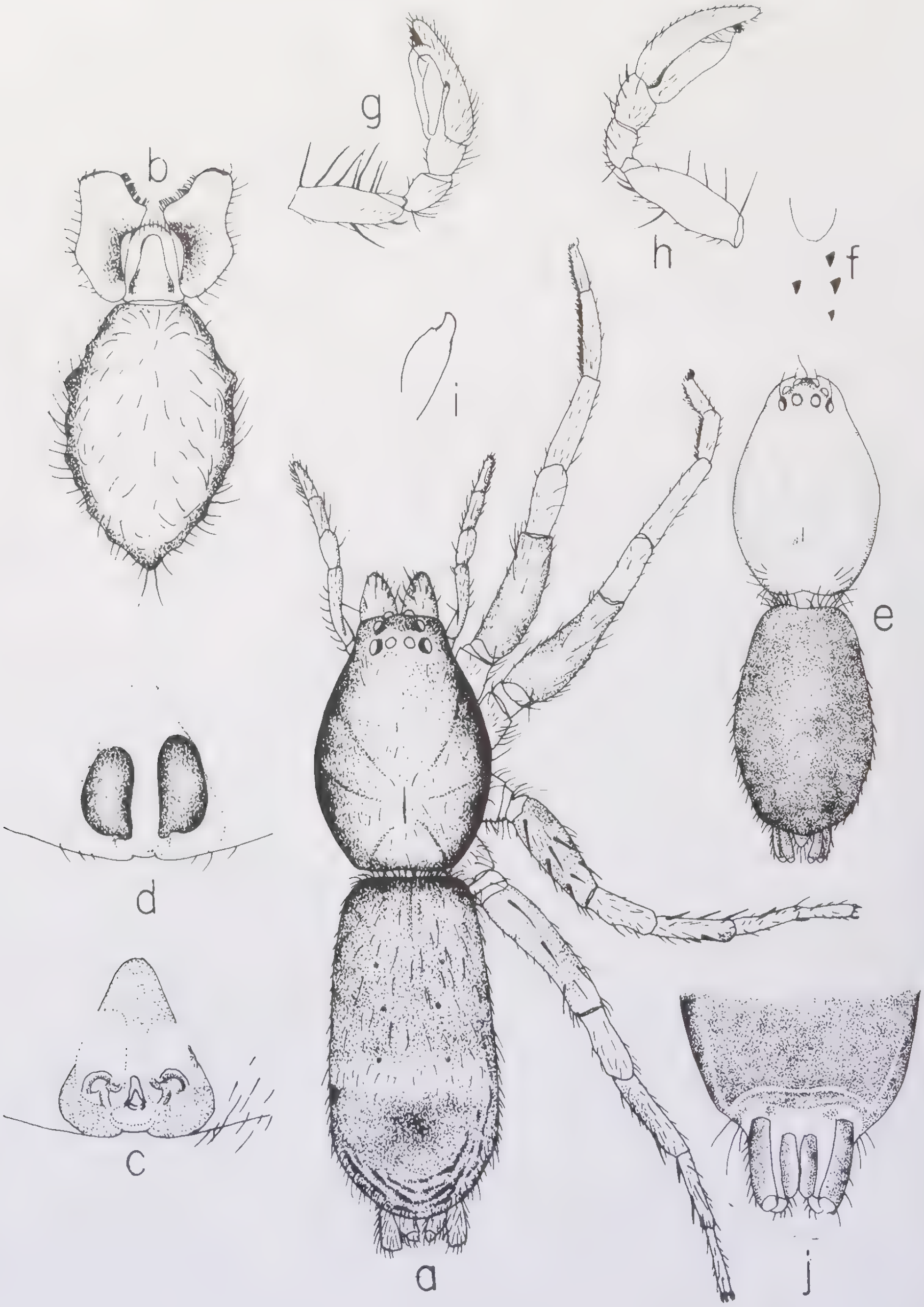

Fig. 107. Female *Poecilochroa dayamibrookiana* n. sp. (a); sternum, labium, and maxillae (b); dorsal (c) and ventral (d) views of epigynum; and male (e); cheliceral teeth (f); lateral views of pedipalp (gh); tip of tibial apophysis (i); and posteroventer of abdomen showing spinnerets (j) of male.

female, except for size and hirsuteness. Chelicerae vertical with marginal teeth similar to female. Legs brown with grayish tinge except yellowish brown to brown tarsi, femora without ventral spines, tibial spination formulae I = 0-0-0-0, II = 0-1-0-0, III = 3-4(1-1-2)-2-2, IV = 0-4(1-1-2)-2-2, metatarsus spinous in legs III and IV but spineless in leg I, and with a pair of basal ventral spines in leg II, scopulae absent in metatarsi and tarsi of legs I to IV, two-clawed with four or five teeth per claw and club-shaped claw tufts, leg formula 4123.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.04	0.56	0.76	0.64	0.44	3.44
2	1.00	0.48	0.64	0.64	0.42	3.18
3	0.92	0.40	0.64	0.68	0.44	3.08
4	1.24	0.64	1.00	1.08	0.52	4.48

Pedipalps yellow-brown, femora with five or six erect, brown ventral setae, retrolateral tibial apophyses, reddish brown, one half as long as cymbium, tip curved

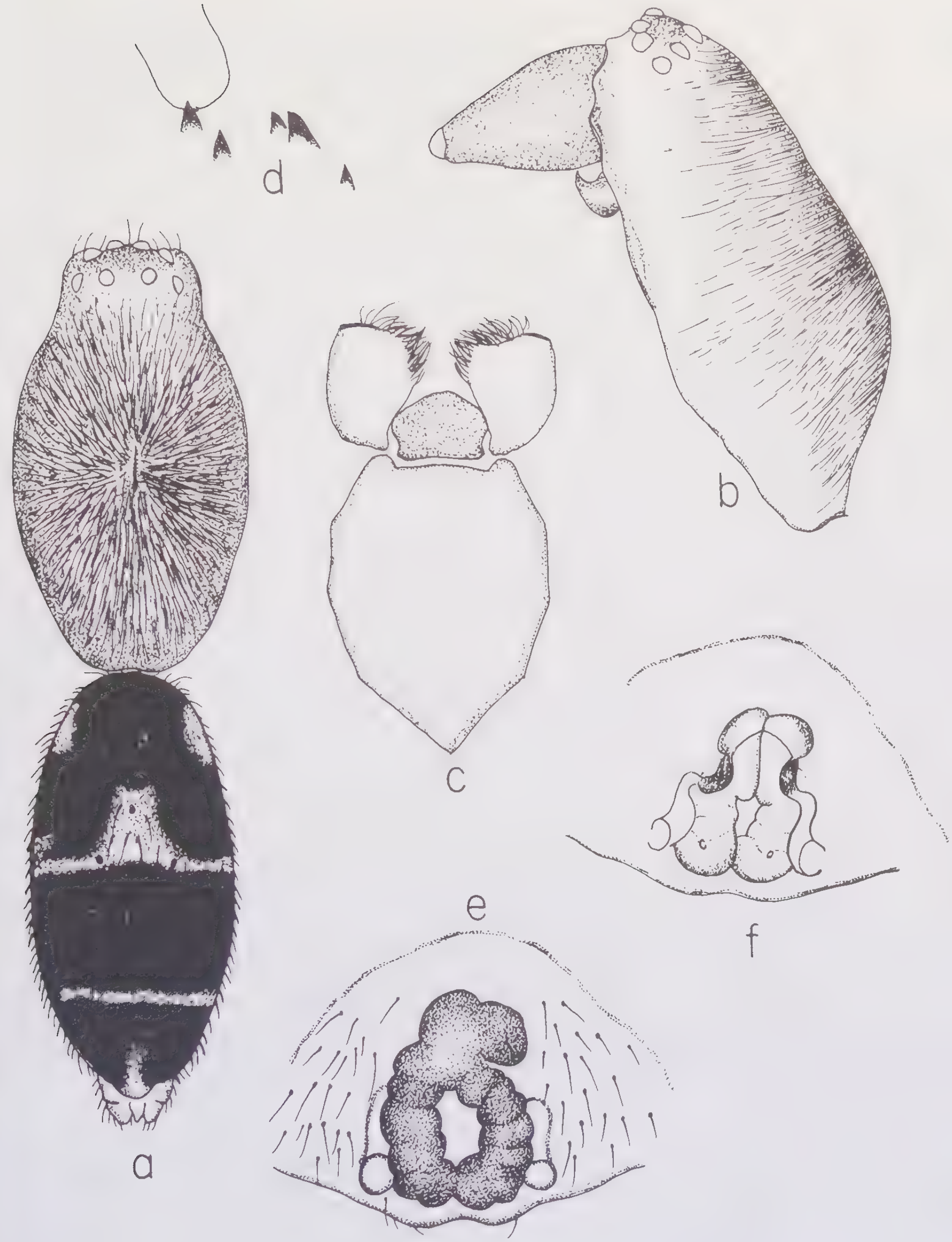

Fig. 108. Female *Poecilochroa otonensis* n. sp. (a); side view of carapace (b); sternum, labium, and maxillae (c); cheliceral teeth (d); and dorsal (e) and ventral (f) views of epigynum.

inwards as a blunt tooth, midhalf narrowed and enlarged again apically, and ejaculatory duct very prominent. Abdomen gray without sigilla and transverse white band, dorsomedian smooth along the brown, broad shield-like structure, margins with fine white hairs, two small corrugations above anal tubercle and numerous brown hairs at the distal end, abdominal venter light grayish brown with a transverse groove dorsad of anterior spinnerets. Spinnerets all cylindrical, posterior pair thinner and slightly longer than anterior, median nearly as long as anterior pair.

Variation: Males range in length 3.32–3.88 mm. Body color varies from brown-yellow, grayish brown to reddish brown with gray abdomen. A male has a brown dorsal shield-like band.

Etymology: Derived from the Tagalog word 'dayami' (straw) and type locality.

Natural history: The female holotype was aspirated from a pile of rice stubble on a steep hill ca. 300 m a.s.l. in October and three males were vial-tapped from the uprooted stubble.

Material examined: **PHILIPPINES:** *Palawan Is.*, Brookes Pt., Mainit Vill., holotype female and three male paratypes, 1 October 1987, A.T. Barrion.

Distribution: Philippines.

Poecilochroa otonensis new species
(Fig. 108a–f)

Description:
Female: Total length 6.12 mm. Cephalothorax 2.92 mm long, 1.72 mm wide, 0.88 mm high. Abdomen 3.20 mm long, 1.56 mm wide, 1.44 mm high. Sternum 1.3 times longer (1.28 mm) than broad (0.96 mm), and indented at labium base. Cephalothorax reddish brown, oblong, broadest midway its length and subequal in diameter on both ends. Eight eyes in two rows, homogeneous with black margins, AE row recurved and PE row straight to slightly recurved. AME closer to the ALE than to each other. AME–AME separation more than one half eye diameter. PME–PME separation more than one eye diameter, closer to PLE than to each other. Lateral eyes subequal in size. Eye diameters (mm): AME = 0.12, PME = 0.11, ALE = PLE = 0.10 . Clypeus height one AME diameter. Mandibles short, armed with three promarginal and two retromarginal teeth. Pedipalp femora with six ventral and two dorsal spines. Legs brown, femora yellow apically and banded dark brown basally, tibiae with three pairs of ventral spines except tibia III with only two pairs. Leg formula 1243.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.40	0.84	2.16	2.48	1.20	9.08
2	1.84	0.72	1.84	1.48	1.08	6.96
3	1.76	0.64	1.40	1.44	0.88	6.12
4	1.88	0.68	1.68	1.48	1.16	6.88

Pedicel longer (0.46 mm) than broad (0.28 mm) borne under the posterior end of carapace. Abdomen oblong, black with a white transverse band midlength, two white spots dorsoapically and one dorsoposteriorly Epigynum simple without scape, spermathecal external opening prominent. Spinnerets short, not as cylindrical as in other gnaphosids.

Etymology: Specific epithet named after the type locality.

Natural history: Associated with rice root aphid *Tetraneura nigriabdominalis* (Sasaki) in cracked soils in a dried wetland ricefield. Probably a predator of winged aphids.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Oton, Rizal Vill., holotype female, 17 January 1978, A.T. Barrion.

Distribution: Philippines.

Poecilochroa alcala new species
(Fig. 109a–h)

Description:
Female: Total length 4.56 mm. Carapace 1.84 mm long, 1.24 mm wide, 1.08 mm high. Abdomen 2.72 mm long, 1.52 mm wide, 1.40 mm high. Cephalothorax brown with yellow dorsomedian area, black ocular area, seven or eight gray interconnected and petal-like striae subdorsally, fovea brown and short, two rows (three per row) of brown setae along sides of fovea and one row of six or seven setae above it, directed towards median of PME and AME, margins of carapace with a pair of laterally projected dark brown setae above coxae II and III and two pairs (one long and three short) of dorsally projected setae dorsad of coxa IV. Eight eyes in two rows, strongly recurved AE row shorter (0.38 mm) than the partially recurved to straight PE row (0.42 mm). Eye diameters (mm) in decreasing order: AME = PLE = 0.09 and ALE = PME = 0.08. AME–AME separation two thirds AME diameter. AME nearly contiguous to ALE. PME– PME separation a little shorter than one PME diameter. PME–PLE separation one half PME diameter. Clypeus height one AME diameter. Sternum longer (1.12 mm) than wide (0.76 mm), with a pair of ovate yellow spots medially, margins more highly hirsute than median, apical end slightly recurved, laterals without spur-like extensions and nearly straight, pointed posterior end yellow with numerous hairs. Labium yellowish brown, longer than wide, basal end straight and wider than the narrow and rounded apex. Maxillae yellow with a widened apical end, narrowed base, concave inner margin, serrula black and elevated, brown scopulae at the junction of the inner and distal sides. Chelicerae vertical with two promarginal and one retromarginal teeth. Legs yellow with black tinges in femora I, II, and III, leg IV black except yellow tarsi, base of femora, and basal three fourths of patellae and dorsal tibia, spination formula in tibiae I = 0-3(1-1-1)-0-0, II = 0-2(0-1-1)-0-0, III (right) = 0-1(0-0-1)-0-0, III (left) = 2-4(1-1-2)-2-3, IV = 0-6(2-2-2)-2-2. Metatarsi I and II with ventral scopulae and one ventral spine each, tarsi with ventral scopulae, metatarsi and tarsi III and IV without scopulae, the former spinous except the right metatarsus with only apical spines, tarsi two-clawed with five teeth per claw, leg formula 4321. Pedipalps yellow, tarsi single-clawed with two teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.20	0.60	0.92	0.64	0.44	3.80
2	1.28	0.68	0.92	0.72	0.52	4.12
3	1.36	0.64	0.80	0.92	0.60	4.32
4	1.46	0.72	1.20	1.28	0.60	5.26
Pedipalp	0.56	0.24	0.30	–	0.48	1.58

Abdomen black with three pairs of ovate sigillae, a white transverse band below midlength, apical end white, numerous brown setae, venter brown with one pair of parallel longitudinal median stripes and black towards posterior. Anal tubercle black and triangular. Spinnerets black except white terminal segment of posterior spinnerets, anterior pair larger than posterior, lengths nearly subequal. Epigynum simple, a pair of small ovate pores in a recurved yellow band with a black background.

Etymology: *P. alcala* was named after the type locality.

Natural history: Only two specimens (one female and

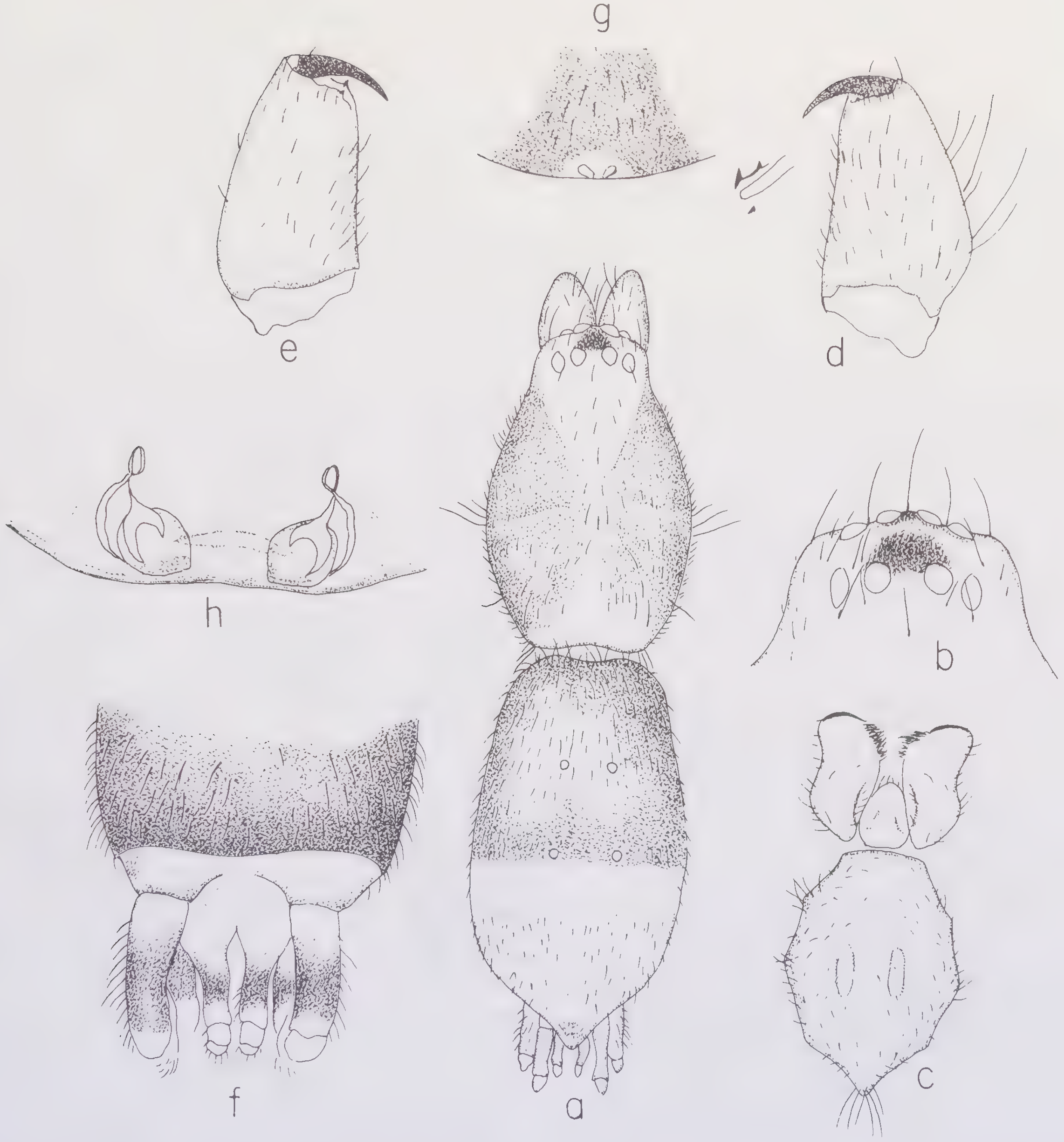

Fig. 109. Female *Poecilochroa alcala* n. sp. (a); cephalic area (b); sternum, labium, and maxillae (c); dorsal (d) and ventral (e) views of right chelicera; posteroventer of abdomen showing spinnerets (f); and dorsal (g) and ventral (h) views of epigynum.

one male) were suctioned by D-Vac machine in September from *Imperata cylindrica*.

Material examined: PHILIPPINES. *Luzon Is.*, Cagayan Prov., Alcala, holotype female and paratype male, 21 September 1981, A.T. Barrion.

Distribution: Philippines.

Poecilochroa parangunifascigera new species

(Figs 110a–i, 111a–e)

Description:

Female. Total length 5.80 mm. Carapace 2.60 mm long, 1.60 mm wide, 1.36 mm high. Abdomen 3.20 mm long,

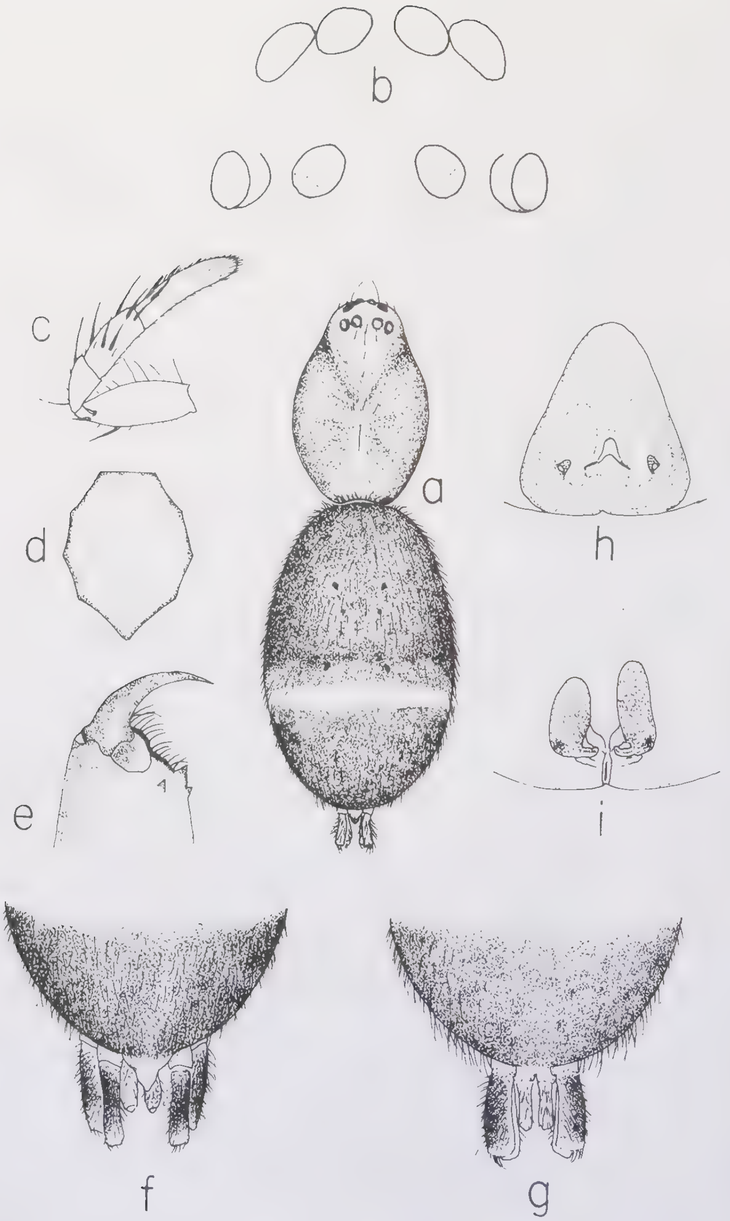

Fig. 110. Female *Poecilochroa parangunifascigera* n. sp. (a); eye pattern (b); pedipalp (c); sternum (d); chelicera (e); posterodorsal (f) and posteroventral (g) abdomen; and dorsal (h) and ventral (i) views of abdomen.

2.08 mm wide, 1.08 mm high. Cephalothorax brown, narrow in the cephalic area and broad in the thoracic area, broadest between coxae II and III, clothed with fine white hairs dorsally, blackish along thoracic margins, eye rims black, fovea moderately small with three or four striae emanating from each side. Eight eyes in two recurved rows, AE shorter (0.50 mm) and more recurved than the longer PE row (0.64 mm). Eye diameters (mm) in decreasing order: ALE = PME = 0.14, PLE = 0.12, AME = 0.10. AME separation one fifth shorter than one AME diameter, AME contiguous to ALE. PME separation less than one PME diameter and equal to one PLE diameter. PLE–PME separation one third less than one PLE eye diameter. Clypeus height one ALE diameter. Sternum reddish brown, longer (1.48 mm) than wide (1.08 mm), anterior end straight, lateral margins with spur-like outgrowths opposite each coxa, grayish extensions in between coxae and broadest between coxae II, III and IV. Labium brown, longer (0.42 mm) than wide (0.31 mm), ovate with a rounded tip and truncated base. Maxillae reddish brown, elevated medially (more visible laterally) up to basal one half, dorsolateral one half rounded to slightly bulging, inner lateral margin concave for reception of labium, scopulae diagonal in the junction of apico-inner lateral area. Chelicerae short but robust, reddish brown, margins armed with two promarginal (one large and one small) and one retromarginal teeth. Legs moderately long, red-

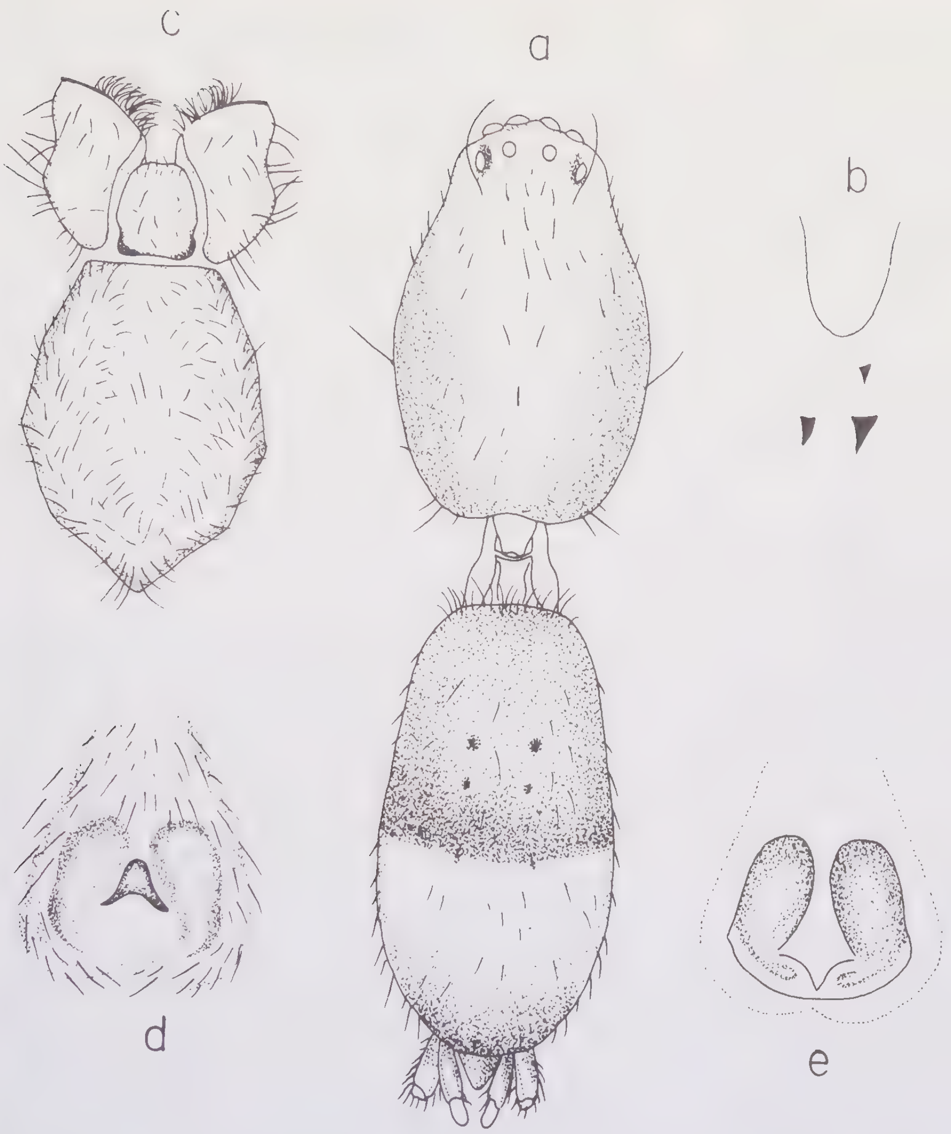

Fig. 111. Small female *Poecilochroa paranguniƒascigera* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

dish brown, femora with only dorsal spines; tibiae with ventral spines only in (spine formulae) I = (1-1-1) and II = (1-1-0), tibia III complete dvpr 1-4(1-1-2)-2-2; patellae I to IV and tibiae I to IV with a dorsal long brown erect hair before the distal end, metatarsi spinous in III, none in I and one ventral in II, leg IV missing (no longer in vial), metatarsi and tarsi with ventral scopulae, tarsi two-clawed with four or five teeth in each claw, leg formula 4213. Pedipalps brown to reddish brown, with two rows (four and two) of long erect, brown ventral setae, each tarsus single-clawed with three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.70	1.00	1.30	1.04	0.60	5.64
2	1.72	0.92	1.28	1.12	0.64	5.68
3	1.56	0.80	1.02	1.12	0.70	5.20
4	1.88	1.14	1.42	1.20	0.78	6.42
Pedipalp	0.72	0.36	0.40	–	0.60	2.08

Abdomen grayish to black with a transverse white band just posterior midlength and with three pairs of round to ovate brown sigillae anterior to the band, five or six light yellow transverse striations in the posterior one third, venter of abdomen grayish brown with several pit-like marks marginally, laterals with three or four longitudinal grooves. Spinnerets same color as dorsum of abdomen, all three pairs cylindrical, anterior pair the longest and the largest, median pair the shortest and the smallest. Epigynum triangular or dome-shaped, brown with a reddish brown median structure, posterior epigynal with a transverse median slit, spermathecae lobe-like and of unequal height.

Variation: The paratype female is smaller (5.12 mm long) and has different ventral tibial spination formulae: I = 3(1-1-1), II = 1, III = 4(1-1-2), and IV = 3(1-0-2). The epigynum has a moderately broad median sclerotized plate, with spermathecae of equal size converging apically.

Etymology: Derived from the Tagalog word 'parang', which means like, and the species *P. unifascigera*.
Natural history: *P. parangunifascigera* were collected in pitfall traps, in November, set near dryland ricefield in a cleared secondary dipterocarp forest.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 7 November 1984, A.T. Barrion, one female paratype, same locality as holotype, 14 November 1984, A.T. Barrion.
Distribution: Philippines.

Genus *Geodrassus* Chamberlin

Geodrassus Chamberlin, 1922. Proc. Biol. Soc. Washington 35: 15a.

Geodrassus is a very small genus, represented by only three nominal species, all from the Nearctic region. It is very much like *Drassodes* Westring, 1851. In fact, Platnick and Shadab (1975) synonymized *Geodrassus* under the genus *Drassodes*. However, the genus is retained here and distinguished from *Drassodes* by the presence of a small tooth in the retromargin, tarsus of male pedipalp longer than tibia, RTA hidden to inconspicuous, tegulum base extended to tibia, and abdomen of male without scutum.

Geodrassus ellenae new species

(Figs 112a–d, 113a–g)

Description:
Female: Total length 6.50 mm. Cephalothorax 2.20 mm long, 1.80 mm wide, 1.10 mm high. Abdomen 4.30 mm long, 2.70 mm wide, 2.45 mm high. Cephalothorax orange-brown except black fovea and AME, cephalic distinctly narrower than the thoracic area, with black hairs and setae directed towards foveal area. Eight eyes in two rows, AE straight and slightly shorter than the procurved PE, AME dark and the rest pearly white, ALE slightly oblique with anterior apices converging and posterior apices diverging, similar to PLE, PME anterior apices diverging and posterior apices converging. Eye diameter (mm): PME (0.20) > ALE (0.15) > PLE (0.14) > AME (0.13). Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.04. PE nearly contiguous to one another. Median ocular quadrangle very slightly wider behind than in front to almost equal, both widths shorter than length. Clypeus height as long as one AME diameter. Sternum yellow, hirsute, and more sclerotized marginally, with spur opposite each leg, anterior end truncate and posterior end blunt, and longer (1.40 mm) than wide (1.20 mm). Labium brownish yellow, slightly wider than long, apex yellow and concave medially. Maxillae brown apically and yellow in the bulbous posterior one half, median groove visible, outer lateral midhalf pointed and apex rounded. Chelicerae rather robust, similar in color to labium and apical one half of maxillae. Promargin with three teeth, second tooth the largest. Retromargin without tooth, or if present very minute. Legs similar in color to chelicerae, long and slender. Spination in femora I = 2(3)-0-1-0, II = 2-2-0-2, III = 3-0-2-2, IV = 4-0-1-1; tibiae I = 0-1-0-0, II = 0-2-0-0, III = 1-5(2-2-1)-2-2, IV = 2-6(2-2-2)-2-3, ventrobasal two pairs in oblique line; metatarsi I–III each with four (2-2-0) ventral spines, IV with four to five spines ventrally. Metatarsi III and IV longer than tibiae III and IV, respectively. Leg formula 4123. Pedipalp slightly shorter than combined length of tibia I and metatarsus I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.80	1.00	1.40	1.30	1.00	6.50
2	1.68	0.85	1.25	1.15	0.90	5.83
3	1.60	0.50	1.00	1.10	0.80	5.00
4	1.90	0.95	1.60	1.80	1.05	7.30
Pedipalp	0.90	0.35	0.55	–	0.85	2.65

Abdomen oblongate, yellow with fine short brown hairs, anterior end with a moderately thick row of brown hairs, and median area with a pair of small brown sigilla. Venter similar to the dorsum except two to five incomplete longitudinal lines and brown epigynum. Spinnerets mostly brown, slender and cylindrical, anterior pair broader in diameter towards apical one half, posterior median yellowish gray in basal one half, posterior lateral pair most slender of the three pairs. Epigynum simple, bell-shaped with an inverted V-shaped mark anterior to the epigastric furrow.
Male: Total length 5.30 mm. Cephalothorax 2.30 mm long, 170 mm wide, 1.30 mm high. Abdomen 3.00 mm long, 1.45 mm wide, 1.30 mm high. Cephalothorax with numerous short fine black hairs. Eye pattern, sternum, labium, and maxillae similar to the female. Patella I brown apically with an angulate ventral notch before apex as seen laterally. Leg formula 1433. RTA hidden, visible in dorsal view of tibia as a triangular yellow structure (pointed apically), with a long spine close to its base, ventral tibial apophysis knob-like basally, with a sharply pointed brown apex projected upward (seen in dorsal view) or inverted r-shaped in lateral view. Base of tegulum extended towards apical one half of tibia. Conductor with a C-shaped coil before tip of cymbium. Embolus long, runs from the tegulum extension to tibia, extended upwards, passing the lateral margin, and exserted at apex of cymbium.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.15	1.25	1.65	1.50	1.15	7.70
2	1.80	0.90	1.40	1.35	1.10	6.55
3	1.55	0.60	1.20	1.20	0.85	5.40
4	2.05	0.97	1.70	1.85	1.05	7.62
Pedipalp	1.10	0.40	0.45	–	1.50	3.45

Abdomen yellow with gray tinge, elongate, and spinnerets visible dorsally. AbL : AbW = 2.07. Venter

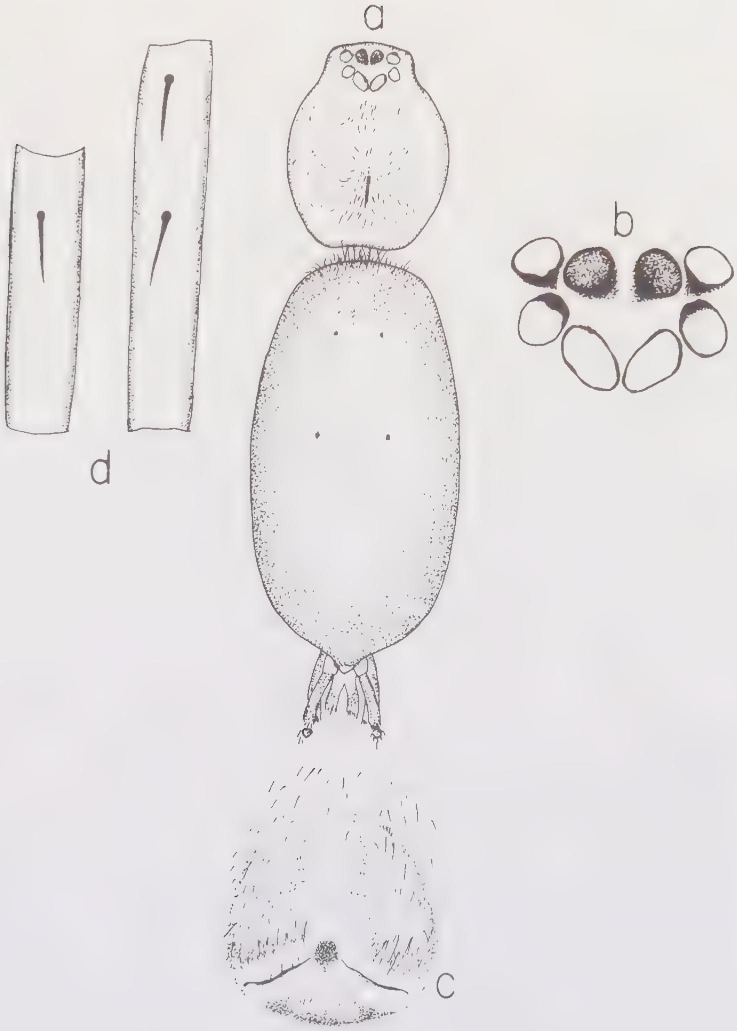

Fig. 112. Female *Geodrassus ellenae* n. sp. (a); eye pattern (b); epigynum in dorsal view (c); and dorsal view of tibiae III and IV (d).

yellow except for the fine short black hairs and slightly brown areas anterior to epigastric furrow.

Etymology: Dedicated to Mrs Ellen Genil.

Natural history: The holotype female was taken from pitfall traps in January, the paratype male (abdomen partially destroyed) and an immature male were collected from pitfall traps in May.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 18 January 1985, A.T. Barrion and M. Perez; one male and immature male paratypes, 14 May 1985, M. Perez and R. Apostol.

Genus *Scotophaeus* Simon

Scotophaeus Simon, 1893. Hist. Nat. Araign. 1(2): 371.

Members of the genus *Scotophaeus* have circular AME, larger than elliptical laterals (ALE). Posterior eye row slightly longer than the anterior row, slightly procurved, eyes equal in size and equidistant from each other. PME elliptical. General appearance very similar to the genus *Drassodes* except for the carapace, which is much narrower in front. Fovea present.

Scotophaeus leoi new species

(Fig. 114a–c)

Description:

Male: Total length 6.85 mm. Cephalothorax 3.30 mm long, 2.45 mm wide, 1.50 mm high. Abdomen 3.55 mm long, 1.80 mm wide, 1.75 mm high. Cephalothorax brownish yellow with slightly dark brown and attenuate cephalic area, narrow black eye rings, and brown longitudinal fovea. Cephalic area with subparallel sides with brown and white hairs. Thoracic area almost flat dorsally and clothed with white fine hairs. Eight eyes in two rows, heterogeneous with dark AME. AE row slightly procurved to straight with AME larger than ALE and shorter than the more procurved PE row. Eye diameter (mm): AME = 0.21, ALE = PLE = 0.14, PME = 0.14.

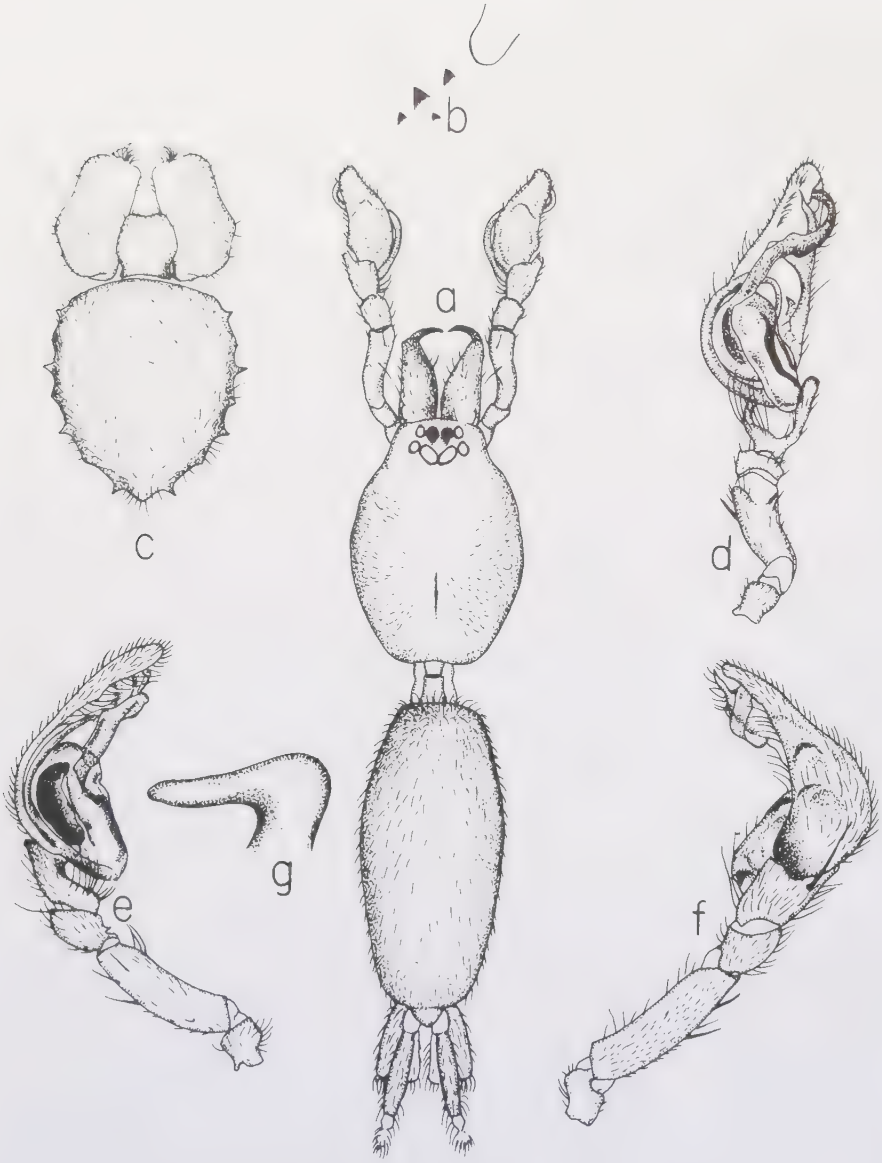

Fig. 113. Male *Geodrassus ellenae* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); ventral (d) and lateral (ef) views of pedipalp; and tip of ventral apophysis (g).

Eye separation: AME–AME about one third diameter of AME, AME–ALE about 0.23 diameter of AME or 0.30 diameter of ALE, PME–PME a little longer than one AME diameter, PME–PLE 0.95 diameter of AME, ALE–PLE one fifth diameter of ALE. Median ocular quadrangle almost a square, anterior width and length equal, posterior a little longer than the anterior. Ocular height large, 0.86 diameter of AME. Sternum brown-yellow, laterals darker brown and rebordered, longer than wide, anterior end truncate, posterior end bluntly rounded between coxae IV. Labium brown with yellow truncate distal end, lateral margins subparallel and longer than wide beyond midlength of maxillae. Maxillae same color as labium, the inner apical one third yellow. Chelicerae reddish brown, hirsute, robust basally, and without distinct boss. Promargin bears scopulae and three teeth, subbasal tooth the largest and the basal tooth dorsad to or right at the tip of the dark reddish brown to black inner lateral ridge of chelicerae. Retromargin with two small wide-apart teeth, both teeth more anterior than the apical tooth of promargin. Legs yellow-brown, long and shorter. Spination in femora II = 3-0-2-3, III = 3-0-3-3, IV = 3-0-3-2; tibiae II = 0-4-2-2, III–IV = 1-6-2-2; metatarsi II = 0-2-0-0, III = 6-5-1-2, IV = 6-6-2-2. Tarsi two-clawed, each claw with at least seven teeth and plumose claw tuft. Leg IV > II > III. Pedipalp as long as combined length of metatarsus III and tarsus III. Retrolateral tibial apophysis flat, as long as broad, and subspherical, with a small bifurcated tooth apically on the side. Cymbium a little longer than combined length of patella and tibia, longer than wide, and tapering apically, apex with two small clusters of hairs and a pair of setae subapically. Tegulum bulbous and roundish base, partly extended posteriorly. Embolus

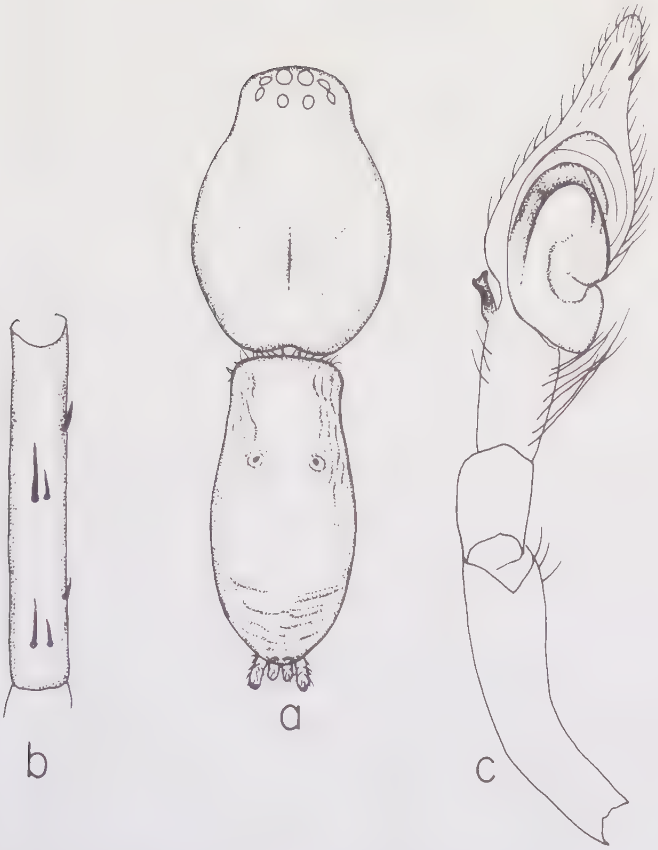

Fig. 114. Male *Scotophaeus leoi* n. sp. (a); venter of tibia II (b); and venter of pedipalp (c).

very fine and moderate long, tip partially curved inwards posterior to the apical margin of cymbium cavity, base emanates from the midlateral sides.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	–	–	–	–	–	–
2	2.85	1.25	2.65	2.30	1.30	10.35
3	2.55	1.10	1.90	2.20	1.05	8.80
4	3.60	1.30	2.85	3.63	1.25	12.63
Pedipalp	1.20	0.45	0.55	–	1.05	3.25

Abdomen pale yellow-brown, uniformly clothed with short brownish hairs, almost twice longer than wide, anterior margin with a moderately thick cluster of curved setae, anterior one half bears two pairs of circular yellow spots, with a brown globular spot in the middle, sublaterals with light longitudinal striae and posterior one half transversely striated gray, becoming more prominent anterior to anal tubercle. Spinnerets (anterior and posterior pairs) equally long and yellow-brown. Posterior pair partly diverging apically. Median pair yellow, much shorter and more slender than the anterior and posterior pair. Base of entire spinnerets with a yellow circular ring lined with moderately long brown hairs.

Etymology: Named after Prof. Leo Rimando for his trust and moral support in the senior author's initial work as instructor in general biology.

Natural history: A single male was collected by pitfall trap in slash-and-burn upland rice near a secondary dipterocarp forest in January.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., one male holotype (legs I both missing), 9 January 1985, A.T. Barrion.

Distribution: Philippines.

Remarks: This represents a new genus, combining characters of *Drassodes*, in having notched trochanter, procurved PE row longer than the anterior, and *Scotophaeus* in possessing large AME, much larger than ALE. However, for the lack of more specimens, it is temporarily placed in *Scotophaeus*.

The arrangement of the posterior pairs of spinnerets also suggests its affinity to *Clubiona* (Clubionidae).

Scotophaeus cecileae new species
(Fig. 115a–f)

Description:

Male: Total length 3.76 mm. Carapace 1.76 mm long, 1.28 mm wide, 0.88 mm high. Abdomen 2.00 mm long, 1.08 mm wide, 0.88 mm high. Cephalothorax brown, ocular area and eye margins black, cephalic area narrower than thoracic area, fovea light brown and minute, carapace hairs fine and small. Eight eyes in two rows, strongly recurved AE row shorter (0.32 mm) than the nearly straight to slightly recurved PE row (0.41 mm). Eye diameters (mm) in decreasing order: PME 0.09, AME–PLE 0.08, ALE 0.07. AME–AME separation one half AME diameter. AME nearly contiguous to ALE. PME–PME separation less one PME diameter, equal to one AME diameter. PME–PLE separation two thirds PME diameter. Clypeus height one AME diameter. Sternum yellowish brown, darker towards margins, distal end straight, similar to lateral margins, the latter with light gray spur-like extensions opposite each coxa, posterior tapers to a rounded end. Labium a little longer (0.24 mm) than wide (0.21 mm), truncated base wider than apex with a slight cleft medially. Maxillae smaller in size. Chelicerae vertical with three promarginal and one retromarginal teeth. Legs yellowish brown, except gray apical one half of femora III and IV, one half to entire metatarsus III and tibia IV, and black metatarsus IV. Tibial spination I and II = 0-5(1-2-2)-0-0, III = 5(2-1-2)-3(1-1-1)-2-2, IV = 0-5(1-2-2)-2-2. Metatarsi I and II with club-like hairs in the ventral scopulae and a pair each of basal vertical spines, unlike spinous III and IV without scopulae, tarsi two-clawed with three to five teeth per claw, claw tuft hairs clubbed, leg formula 4123. Pedipalps yellow, each with a dark brown retrolateral tibial apophysis and ejaculatory duct, retrolateral tibial apophyses acutely pointed, midventral tibiae concave, each with an elevated or hump-like retrolateral. Each cymbium short with a minute embolus.

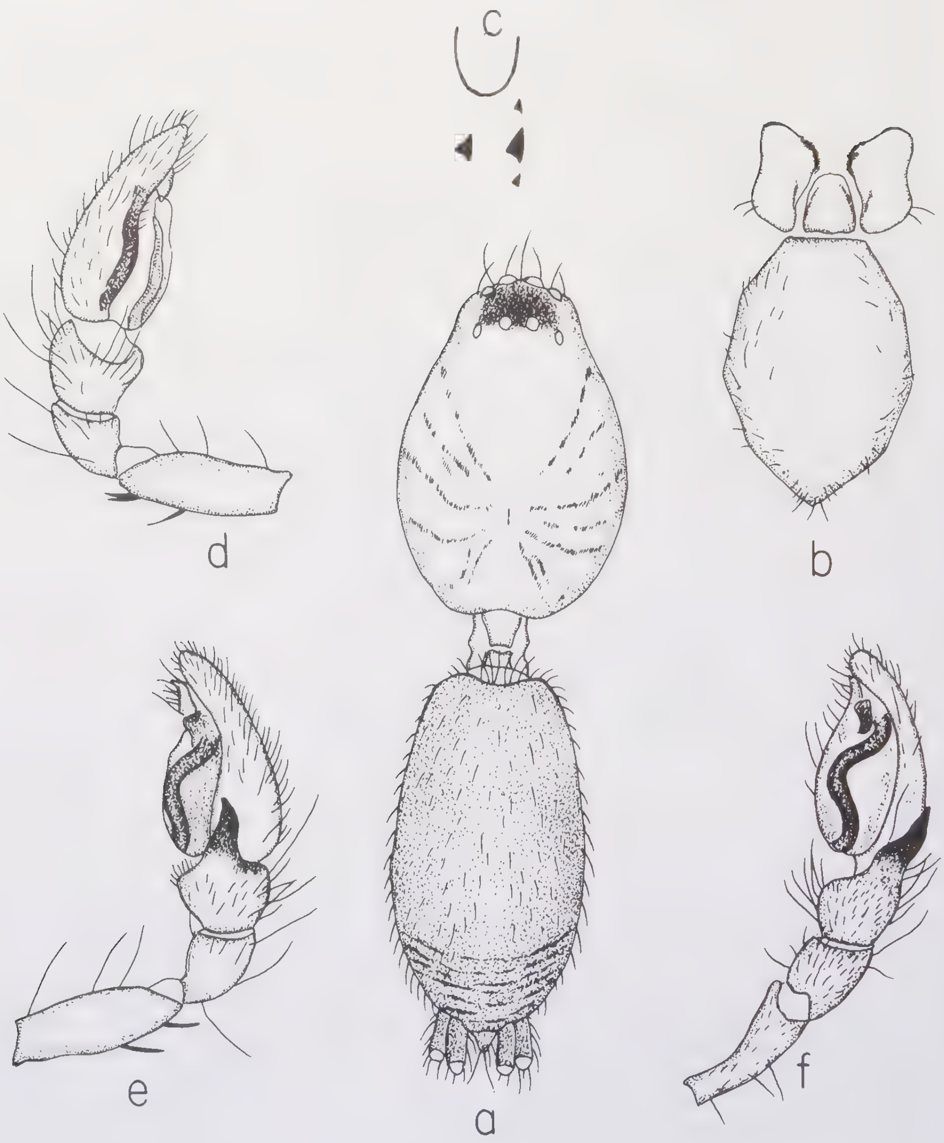

Fig. 115. Male *Scotophaeus ceciliae* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); ventrolateral (d) and lateral (ef) views of pedipalp.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.24	0.64	0.92	0.72	0.52	4.04
2	1.12	0.60	0.86	0.80	0.52	3.90
3	1.00	0.56	0.92	0.84	0.56	3.88
4	1.32	0.64	1.20	1.32	0.60	5.08

Abdomen grayish brown anterior to the pale white transverse band and black posterior to that band with six or seven transverse yellow grooves anterior to the small apophysis-like anal tubercle, sides of abdomen with eight or nine longitudinal corrugations, venter brown above epigastric furrow and grayish brown below furrow, with a pair of parallel and longitudinal white bands. Spinnerets black, anterior pair distinctly larger and longer than the posterior. Medians intermediate in size and length.

Etymology: Named after Cecile Salonga.

Natural history: This single specimen was suctioned by D-Vac machine in September from *Imperata cylindrica* L.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Alcala, holotype male, 21 September 1981, A.T. Barrion.

Distribution: Philippines.

FAMILY THOMISIDAE SUNDEVALL

(Crab Spiders)

These spiders are small, 3.0 to 8.5 mm in length, have a body flattened in a horizontal plane, and are crab-like in appearance and locomotion. The first two pairs of legs are laterigrade, bear paired ventral spines, and are more enlarged and more powerful than the third and fourth pairs. They habitually run sideways as well as frontwards. Anterior tarsi without scopulae. The powerful and spinose legs are used for seizing prey, as crab spiders construct no webs, but hunt by stealth and ambush. The eight eyes are in two rows, dark and homogeneous, often outlined in white, and the posterior row is usually recurved. Lateral eyes are elevated on tubercles, which may be joined. The labium is free, chelicerae have a boss, and the scopulae are poorly developed or lacking.

KEY TO THE THOMISID GENERA AND SPECIES

1 Chelicerae with strong promarginal and retromarginal teeth (subfamily Stephanopinae). 2

– Cheliceral teeth absent, or, if present, tooth small and weak. 6

2 Prosoma, opisthosoma, and legs with unusual or unique spines and minute teeth present between promargin and retromargin. 3

– Prosoma, opisthosoma, and legs with usual spines and chelicerae have no teeth between promargin and retromargin. 5

3 Abdomen with short and long blunt-tipped or semiclubbed spines (Fig. 116ab) and subbasodorsal one third of tibiae with a pair of trichobothria close to each other (Fig. 116a); midprolaterals of leg I normal, without a set of spines, apical margin of sternum recurved (Fig. 116d); metatarsus III with short clubbed setae (Fig. 116e). .... *Borboropactus mindoroensis* n. sp. (Fig. 116a–g)

– Abdomen with a few short clubbed setae in a transverse row subposteriorly; sometimes present along lateral margins of carapace; midprolaterals of leg I with three or four peg-like spines. 4

4 Eye diameter (mm): ALE (0.20) > AME = PME = PLE (0.18); CL : CW = 1.20; CL : AbL = 1.25; margins of carapace without clubbed setae except in posterior one half of abdomen, apical one half of abdomen narrower than posterior one half, with slender clubbed setae; and legs III and IV more dark-colored than I and II (Fig. 117a); tip of RTA slightly pointed and base of cymbium not expanded in ventral view (Fig. 117gi). .... *Borboropactus umaasaeus* n. sp. (Fig. 117a–i)

– Eye diameter (mm): ALE = PLE (0.17) > PME (0.15) > AME (0.13); CL : CW = 1.29; CL : AbL = 1.01; posterolateral margins of carapace with clubbed setae; abdomen parallel-sided, truncate apically, and setae on posterior end more prominently clubbed (Fig. 118a); apex of RTA obliquely blunt (Fig. 118f) base of cymbium expanded basally (Fig. 118g). .... *Borboropactus bangkongeus* n. sp. (Fig. 118a–i)

5 Carapace dark reddish brown; ALE not on a prominent tubercle; cephalic diameter more than one half thoracic width and striae directed towards fovea (Fig. 119a); femora with peg-like teeth; femur I with two dorsal and four prolateral (two prolateral and two dorsoprolateral) spines; abdomen globular with numerous black to gray spots clothed with short white hairs; retromargin with two teeth, a basal bifurcate one and a normal apical one (Fig. 119b). .... *Cupa kalawitana* n. sp. (Fig. 119a–f)

– Carapace yellowish with grayish bands; ALE on a distinct tubercle; cephalic diameter approximately one half of thoracic diameter (Fig. 120a); femora smooth, I with three dorsal and three prolateral spines; abdomen ovoid with gray patches and strong setae; retromargin with a single tooth and two in the promargin (Fig. 120b). .... *Tharrhalea mariae* n. sp. (Fig. 120a–d)

6 Pedipalps and legs with branched hairs; tarsi longer than metatarsi in legs I and II, respectively (subfamily Stiphropodinae); flat spiders, carapace longer than wide, abdomen almost globular except concave anterior end with a pair of large median subspherical sigillae separated from each other by one half its diameter (Fig. 121a); epigynum with a broad orifice, lateral epigynal margins sclerotized but not the anterior and median part with a transverse thin band (Fig. 121b). .... *Stiphropus sangayus* n. sp. (Fig. 121a–d)

– Appendages without branched hairs. 7

7 Tarsal claw tufts formed by hairs adapted for holding or clasping (subfamily Dietinae). 8

– Tarsal claw tufts absent, or, if present, poorly developed and formed by simple hairs (subfamily Thomisinae). 9

8 Dorsum of abdomen pale yellow with four pairs of brown-yellow spots arranged in two longitudinal rows; CL : CW = 0.96; AbL : AbW = 2.61 (Fig. 122a); venter of tibia I with eight spines in four oblique pairs, II with seven spines, metatarsi I and II with six spines in three pairs; metatarsus I/tarsus I = 2.29; RTA small and normal, pointed apically, distal tibial apophysis (DTA) strongly developed and sickle-shaped (Fig. 122e). .... *Loxobates kawilus* n. sp. (Fig. 122a–e)

– Dorsum of abdomen brown and slightly sclerotized; CL : CW = 0.90; AbL : AbW = 1.87 (Fig. 123a); venter of tibia I with 13 ventral spines (Fig. 123c), II with eight; metatarsus I/tarsus I = 1.76; RTA sclerotized and tubercle-like, VTA strongly developed and hooked apically (Fig. 123e). .... *Loxobates masapangensis* n. sp. (Fig. 123a–e)

9 Clypeus broad; PLE tubercles more pronounced than ALE. 10

– Clypeus narrow; ALE tubercles larger than PLE. 12

10 Carapace slightly wider than long, long setae present and front strongly protruding; abdomen with a dorsal tubercle at posterior end (visible in lateral view), grayish brown with a dorsomedian broad and constricted white band (Fig. 124a); spinnerets posteriorly borne; legs I and II distinctly longer than III and IV, tibia I with four or five ventral spines, II with three, and metatarsi I and II each with six (three pairs); metatarsus I/tarsus I = 1.63; leg formula 1234; RTA short and blunt with two short prolateral setae (Fig. 124bc). *Tmarus dostinikus* n. sp. (Fig. 124a–c)

- Carapace longer than wide with short setae; abdomen long, tail-like, and tapers posteriorly; spinnerets almost midventrally located. 11

11 Carapace brownish yellow with light green tinge, abdomen white with greenish tinge (Fig. 125a); CL : AbL = 0.26; AbL : AbW = 7.16; ALE three to five times AME diameter; spinnerets at midlength of abdominal venter (Fig. 125e); RTA bifurcate apically and VTA strongly rounded apically (Fig. 125o–q); spination in tibia I = 3-4-4-3 and II = 2-3-3-3. ... . *Monaeses habamatinikus* n. sp. (Fig. 125a–q)

- Carapace yellow with a pair broad longitudinal brown bands, abdomen white medially and bears a broad grayish band subdorsally (Fig. 126a); CL : AbL = 0.42; AbL : AbW = 6.50; ALE six times AME diameter; spinnerets in the caudal one third of abdomen; RTA and VTA moderately long and rounded at tip (Fig. 126c); spination in tibia I = 2-6-3(4)-3, and II = 1-1-1-1; metatarsi I and II with four and three ventral spines, respectively. .... *Monaeses aciculus* (Simon) (Fig. 126a–d)

12 Lateral eyes on a strong conical protuberance. . 13

- Lateral eyes not as above. 21

13 Abdomen much longer than wide; tubercle on protuberance between ALE and PLE small. 14

- Abdomen wider than long or as wide as long; protuberance between ALE and PLE strongly developed. 17

14 Abdomen rounded posteriorly; carapace with a longitudinal median white band. 15

- Abdomen tapered posteriorly; carapace without a longitudinal median white band. 16

15 Cephalothorax slightly longer than wide, CL : CW = 1.04, with a white I-band medially (Fig. 127a); chelicerae yellow with two black spots, midhalf with six or more spines (Fig. 127c); tibia I with eight (five + three) ventral spines in a 2-2-1-2-1 arrangement (Fig. 127e); metatarsus I with 14 (eight + six) ventral spines (Fig. 127f); epigynum with avocado-shaped spermathecae and an anterior central hood (Fig. 127gh). *Runcinia sangasanga* n. sp. (Fig. 127a–h)

- Cephalothorax distinctly longer than wide, CL : CW = 1.17, with a T-shaped median band in the female (Fig. 128a) and a pair of broad reddish brown sublateral bands in the male (Fig. 128e); chelicerae without black spots; tibia I with ten (2-1-2-1-1-3) ventral spines; metatarsus I with 14 (2-1-2-1-2-2-2-2) ventral spines; epigynum squarish, central hood posteriorly located (Fig. 128c). .... *Runcinia albostriata* Boesenberg and Strand (Fig. 128a–e)

16 Femora I and II with spots, basal one fourth of femur I with two erect non-flexible prolateral spines; abdomen with corrugations laterally and brown spots in the posterior one half (Fig. 130a); ventral spines in male tibia I = seven, II = five, metatarsi I = 13 and II = ten; female tibia I = 11, II = ten, and metatarsi I = 17, II = 14; posterior end of sternum truncated (Fig. 130c); epigynum with a hat-like median central hood and ovate spermathecae (Fig. 130d); male with a brown band on apex of tibia I, a pair of pale longitudinal bands in carapace and abdomen clothed with numerous short setae (Fig. 130f) and posterior tip of abdomen rounded; pedipalp of male with a small VTA, cone-shaped and well-developed RTA, intermediate tibial apophysis (ITA) lacking, bulb simple, and embolus filiform with apical part visible ventrally (Fig. 130gh). .... *Runcinia acuminata* (Thorell) (Fig. 130a–h)

- Femora I and II without black spots; apex of tibiae I and II, and entire metatarsus I reddish brown (Fig. 129a) apices of patellae with a gray dot; VTA and RTA similar to *R. albostriata* except for a long hair of subbase of RTA projected to ejaculatory duct; sternum rounded posteriorly; ventral spines in tibiae I and II = six each; metatarsi I = II = eight .... Form II of *Runcinia albostriata* Boesenberg and Strand (Fig. 129a–e)

17 Male. 18

- Female. 19

18 Conical protuberance more pronounced, laterals of abdomen with small spines and posterior end strongly rounded without prominently transverse furrows (Fig. 131a); RTA short and pointed, ITA very long, sickle-shaped, tip rounded and almost enclosed on one side of cymbium (Fig. 131e–h); embolus emanates from the basal part of the tegulum. .... *Thomisus italongus* n. sp. (Fig. 131a–h)

- Conical protuberance moderately pronounced, laterals of abdomen without spines, and posterior tip moderately tapers to a rounded end (Fig. 132a); ITA short, pointed apically, and projected laterad (seen in ventral view), almost as long as RTA, with a rounded tip (Fig. 132b), embolus emanates from the subapicolateral part of tegulum. .... *Thomisus okinawensis* Strand (Fig. 132ab)

19 Abdomen coarse, distinctly wider than long, with well-developed lateral tubercles (Fig. 134a), at least seven ridges posteriorly (Fig. 134b), and anterior part overhangs thorax; sternum without bands or spots

(Fig. 134d); epigynum simple, a pair of narrow oblong longitudinal orifices present (Fig. 134g); legs without spots in femur, tibia, and metatarsus particularly leg I. ....*Thomisus iswadus* n. sp (Fig. 134a–g)

– Abdomen smooth, without strong tubercles and posterior ridges; sternum and legs with spots or bands, occasionally absent in sternum. 20

20 Carapace yellowish brown without a white V-shaped median band, CL : CW = 0.91, AbL : AbW = 0.87 (Fig. 135a); sternum without spots (Fig. 135b); epigynum transversely broad C-shaped (Fig. 135f); tibia I with four ventral spines and metatarsi I with ten (2-2-2-2-2) ventral spines. .... *Thomisus ilocanus* n. sp. (Fig. 135a–g)

– Carapace with a white V-shaped median band (Figs. 132c, 133a), occasionally with two dark submedian longitudinal bands (Fig.133a); CL : CW = 1.00, AbL : AbW = 0.98; sternum with a pair of white bands anteriorly (Fig. 132f) or two anterior white and two posterior black bands (Fig. 133b); tibia I with seven (1-2-2-2) ventral spines and metatarsi with 12 (2-2-2-2-2-2) ventral spines. *Thomisus okinawensis* Strand (Figs 132c–h, 133a–c)

21 Cephalic region as wide as the thoracic region. . 22

– Cephalic region narrower than the thoracic region. 25

22 Abdomen strongly sclerotized, producing scutum, median area with five ovoid sigillae (Fig. 136a), overhangs to carapace at midlength (Fig. 136b); coxa IV bifurcate posteriorly (Fig. 136g); RTA and VTA strongly developed. .... *Taypaliito iorebotco* n. sp. (Fig. 136a–j)

– Abdomen not scutum-like, without ovoid sigillae; abdomen not overhanging to carapace 23

23 Abdominal dorsum blackish brown, globular, and clothed with short fine hairs, chalk-white spots or bands absent (Fig. 137a); pedipalp's tibia bears a small hump with a number of hairs on it (Fig. 137d). .... *Camaricus florae* n. sp. (Fig. 137a–e)

– Abdominal dorsum with chalk-white marks. 24

24 Abdomen subglobular, with a chalk-white anchor-like median band and a transverse triangular band on each side directed towards each other (Fig. 138a); carapace squarish with two recurved eye rows, orange-brown except black median patch and margins; metatarsi and tarsi of legs I and II with black longitudinal stripe. .... *Camaricus formosus* Thorell (Fig. 138ab)

– Abdomen oblong, grayish brown, with four median spherical spots in a square arrangement, and laterals each with semiovoid oblique chalk-white bands; carapace with long setae towards subdorsal area of thorax (Fig. 139a); legs without bands or stripes. .. .. *Camaricus parisukatus* n. sp. (Fig. 139a–e)

25 ALE and AME diameter subequal. 26

– $\mathrm{ALE} > \mathrm{PLE} \geqslant \mathrm{AME} \geqslant \mathrm{PME}$. 29

26 Male; white transverse ridge or carina present on front of the carapace, abdomen with five to seven marginal U-shaped striae and fine short hairs dorsally (Fig. 140a); femora II, III, and IV with one, three, and two dorsal spines, respectively; tibiae and metatarsi of legs I and II without ventral spines; RTA pointed; VTA blunt and very short, obliquely truncate in lateral view (Fig. 140cd). .... *Misumenoides matinikus* n. sp. (Fig. 140a–d)

– Female with white transverse carina also; abdomen white with five brown subglobular spots in the middle area (Fig. 141a); tibiae I and II with six and four ventral spines, respectively; metatarsi I and II with 12 each. .... *Misumenoides pabilogus* n. sp. (Fig. 141a–c)

– Front of carapace without carina. 27

27 Carapace uniformly yellow; spination in tibia I = 3-3-0-1, II = 2-2-1-0; metatarsi I and II with nine (1-2-2-2-2) ventral spines (Fig. 142a); anterior epigynal margin of epigynum inverted heart-shaped with a wide median cavity and a pair of apically diverging structures (Fig. 142de). .... *Misumena maputiyana* n. sp. (Fig. 142a–e)

– Carapace with two broad reddish brown to brown longitudinal bands. 28

28 Abdomen longer than wide with striae laterally and seven brown spots dorsally; inverted U-shaped band on carapace with nearly straight inner lateral margins (Fig. 143a); promargin bears two teeth; metatarsi I with 11 ventral spines arranged 2-1-2-2-2-2, II has 11–12 ventral spines; epigynum with a strongly convex and moderately sclerotized anterior epigynal margin; anterior spermathecae transversely ovate (Fig. 143ef). .... *Misumena tapyasuka* n. sp. (Fig. 143a–f)

– Abdomen wider than long with five or six broad transverse brown bands; inner lateral margins of the U-shaped band with double concavities facing each other (Fig. 144a); promargin with three teeth; metatarsi I with five pairs of ventral spines, II with nine arranged 1-2-2-2-2; epigynum simple with a pair of parallel longitudinal slits (Fig. 144d). .... *Misumena menoka* Tikader (Fig. 144a–d)

29 Legs I and II relatively short compared to III and IV; carapace red with white patches and abdomen chalk-white with brown tinge (Fig. 145ad); sternum yellow marginally in apical one half (Fig. 145e); RTA weak, ITA long, blunt at apex, and DTA subtriangular (Fig. 145bc); epigynum with knob-like process medially (Fig. 145fg). .... *Xysticus palawanicus* n. sp. (Fig. 145a–h)

- Legs I and II distinctly longer than III and IV. 30

30 Median ocular quadrangle (MOQ) longer than wide; body with developed setae. 31

- MOQ wider than long or as wide as long; body with less developed setae. 32

31 Abdomen broadest in posterior one half, rounded posteriorly (Fig. 146a); promargin of chelicera with six teeth in a row of hairs, apical four teeth close to one another, basal two teeth separated more basally, and no retromarginal tooth (Fig. 146d); epigynum with a pair of dark sclerotized structure close to epigastric furrow (Fig. 146g). .... *Diaea carangali* n. sp. (Fig. 146a–h)

- Abdomen broadest at midhalf, moderately tapered posteriorly (Fig. 147a), chelicera with two promarginal and one retromarginal teeth (Fig. 147c); epigynum with a transversely concave median plate (Fig. 147d). .... *Diaea tadtadtinika* n. sp. (Fig. 147a–e)

32 Eye diameter: ALE > PLE > AME > PME; lateral eyes clearly on separate tubercles; carapace reddish brown without markings and globular abdomen dirty white, yellowish orange with dark brown margins, dorsomedially pattern is tree-like (Fig. 148a). .... *Synaema globosum* (Fabricius) (Fig. 148a–c)

- Eye diameter and LE pattern similar to above; carapace orange-red and strongly convex, abdomen yellow in apical one half and black in posterior one half (Fig. 149a); RTA pointed and lightly sclerotized, VTA sclerotized and blunt at tip; embolus moderately long (Fig. 148d). .... *Synaema batarasa* n. sp. (Fig. 149a–d)

- Entirely not as above. 33

33 Lateral eyes (LE) on shallow tubercles and markedly separated from each other. 34

- Lateral eyes (LE) on moderately high tubercles, somewhat connected to each other. 39

34 Abdomen longer than wide; carapace and opisthosoma usually with broad longitudinal parallel bands, or V-band only in carapace or only transverse abdominal band. 35

- Abdomen usually wider than long or as long as wide; carapace and abdomen without broad parallel, longitudinal bands. 39

35 Carapace and abdomen with a pair of broad longitudinal parallel reddish brown bands (Fig. 150af); epigynum with a transverse median lip-like structure (Fig. 150d); RTA apically sclerotized and blunt (Fig. 150i). .... *Lysiteles umalii* n. sp. (Fig. 150a–i)

- Carapace and abdomen with different pattern. . 36

36 Carapacial dark brown band inverted U-shaped, wider than abdomen, and yellow-brown legs with gray bands, two or three in femora I–IV and almost reaching both ends of tibia and metatarsi, prominent in legs I and II (Fig. 151a); tibia I and II with four pairs of ventral spines; metatarsi I and II with two pairs of ventral spines; RTA distally sclerotized and VTA large and hatchet-like (Fig. 151d). .... *Lysiteles sorsogonensis* n. sp. (Fig. 151a–d)

- Band on carapace variable, almost entire with a pale yellow longitudinal stripe in the middle, moderately broad and parallel to each other, or U-shaped. 37

37 Legs I and II with brownish femora, grayish black towards apex, tibiae I and II brown on both ends and dorsum of abdomen with ovate white spots (Fig. 152af); epigynum with a transverse lyre-like sclerotized median structure (Fig. 152de); lateral of cymbium developed with a blunt projection (Fig. 152gh). .... *Lysiteles suwertikos* n. sp. (Fig. 152a–i)

- Legs I and II not as above. 38

38 Legs I and II yellowish brown; carapace with a normal U-band branching towards PLE before reaching PME; abdomen pale brown and clothed with long pointed setae, posteriorly with five or six transverse black bands (Fig. 153a); tibia I with eight and II with five ventral spines; RTA sharply pointed, cymbium without lateral protrusion (Fig. 153d). .... *Lysiteles boteus* n. sp. (Fig. 153a–f)

- Legs I and II brown, mottled chalk-white in femora and tibiae slightly darker towards apices of segments of tibiae I and II; carapace almost uniformly brown except white lateral patches and a small chalk-white V-band in the foveal area; abdomen with spines, brown with scattered circular spots and grayish black patches (Fig. 154ab); tibiae I and II with four pairs of ventral spines; femora I and II with five dorsal and four prolateral spines each; tibial apophyses all present – RTA, VTA, ITA but poorly developed, VTA and ITA converging (Fig. 154g). .... *Lysiteles magkalapitus* n. sp. (Fig. 154a–g)

39 Carapace with a pale V-shaped brown band in the foveal area and abdomen longer than wide, with numerous chalk-white spherical spots and three or four black transverse bands posteriorly (Fig. 155a); sternum with lateral outgrowths prominent between coxae I and II (Fig. 155c); venter of tibia I with 13 (2-2-1-2-2-2-2-) spines and II with ten (2-2-1-1-1-2-1) spines. ... *Misumenops morrisi* n. sp. (Fig. 155a–e)

- Carapace and abdomen whitish yellow to dark yellow and abdomen with longitudinal striae laterally (Fig. 156a); tibia I with four or five ventral spines, either two pairs or one + two pairs (Fig. 156d). ... . *Misumenops maygitgitus* n. sp. (Fig. 156a–f)

Genus *Borboropactus* Simon

Borboropactus Simon, 1884. Ann. Soc. Ent. Belg. 28: 301.
Regillus Cambridge, 1884. Proc. Zool. Soc. Lond. 1884: 203.

Borboropactus Simon is one of the moderately large ground-dwelling thomisids endemic in the tropics, comprising no more than 20 nominal species. The genus is characterized by the cephalothorax and abdomen coated with mud; carapace longer than wide and narrowed anteriorly; AE and PE rows recurved, LE large, borne on prominent tubercles; eye diameter: ALE ⩾ PLE ⩾ PME ⩾ AME; median ocular quadrangle narrower in front than behind; clypeus wide, many times wider than AME; sternum longer than wide, similar to labium and maxillae; chelicerae with promarginal, retromarginal, and in-between teeth; legs robust, particularly I and II, and bear strong spines, anterior midhalf of femur I enlarged and with four stout inner spines; leg formula 1432 or 1423; and abdomen prominently longer than wide, almost parallel-sided and bearing spines and clubbed setae.

Borboropactus mindoroensis new species
(Fig. 116a–g)

Description:
Female: Total length 4.90 mm. Cephalothorax 2.60 mm long, 2.20 mm wide, 1.90 mm high. Abdomen 2.30 mm long, 1.90 mm wide, 1.90 mm high. Cephalothorax brown with narrow head, white fine hairs, and a longitudinal row of spines in foveal area and setae laterally, thoracic area higher than cephalic area. Eight eyes in two rows, homogeneously clear with ME < LE, AE row less recurved and shorter than PE row. LE on a moderately large tubercle. Eye diameter (mm): ALE = 0.14, PLE = PME = 0.11, AME = 0.10. Eye separation: AME–AME 0.80 eye diameter, AME–ALE as long as diameter of one PME. PME–PME 1.3 times diameter of AME, PME–PLE twice AME diameter, PLE–ALE 1.5 times diameter of AME. MOQ wider behind (0.33 mm) than in front (0.26 mm), both widths shorter than length (0.38 mm). Clypeus height one third larger than one AME diameter. Sternum yellow, similar to labium and maxillae, longer than wide, narrowly truncated anteriorly and tapered posteriorly between coxae IV. Labium as long as wide, distal end broadly truncated with four long brown setae, outer lateral margins overhang maxillae. Distal end of maxillae rounded, posterior end tapers, and lateral margins straight in apical two thirds. Chelicerae brown, promargin bears four teeth and retromargin with three teeth. Legs dark brown with yellow and black bands in femora and tibiae of legs III and IV, prolaterals of tibia I with three strong short spines, venter of tibia I and II each with five pairs of ventral spines and a pair of trichobothria retrolaterally in basal one third. Tibia II and IV each with a pair of trichobothria in the dorsobasal one third and an erect spine at midlength. Metatarsi I and II with three pairs of ventral spines. Tarsi two-clawed without claw tuft, each claw with a subbasal tooth. Leg formula 1432. Pedipalps brown with gray and yellow bands in femora, tapered tarsi with a moderately long thin claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.20	1.30	2.10	1.25	0.60	7.45
2	1.55	0.75	1.30	0.95	0.55	5.10
3	1.40	0.80	1.20	1.10	0.75	5.25
4	1.70	0.60	1.30	1.10	0.80	5.50
Pedipalp	0.75	0.38	0.40	–	0.73	2.26

Abdomen dark brown, subelongate with truncated anterior end, entire dorsum covered with short clubbed and long subclavate semitapered spines. Venter yellow without setae. Anterior pair of spinnerets near each other basally and second segment toward each other. Posterior spinnerets pale yellow, more wide apart than the anterior pair and basal segment not broad. Epigynum simple without a hood, simply a pair of longitudinal slits parallel to each other, located anterior of epigastric furrow.
Etymology: Named after the type locality.
Natural history: Three specimens (one male, one subadult male, one spiderling) were collected from the root system of the uprooted upland rice in August.
Material examined: PHILIPPINES: *Mindoro Is.*, Mindoro Oriental, Victoria, Pasi Pola Vill., holotype female, 18 August 1989, R.T. Barrion; paratype one subadult female and one spiderling, same data as holotype.
Distribution: Philippines.

Borboropactus umaasaeus new species
(Fig. 117a–i)

Description:
Male: Total length 6.75 mm. Cephalothorax 3.75 mm long, 3.10 mm wide, 1.70 mm high. Abdomen 3.00 mm long, 2.00 mm wide, 1.60 mm high. Cephalothorax yellowish brown with brown bands along cephalic and thoracic areas and thin black rings around eyes. Fovea indistinct but with a small hump in the apex of the basal one fifth. Cephalic moderately elevated, producing a cavity between it and hump of thorax viewed laterally. Lateral margin of carapace lined with clavate setae. Eight eyes in two rows, AE row more recurved but shorter than the slightly recurved PE row. Eye diameter (mm): ALE = 0.20, AME = PME = PLE = 0.18. Eye separation: AME–AME one third narrower than one eye diameter, AME–ALE = PME–PME 0.83 times AME diameter, PME–PLE 1.4 times AME diameter. Median ocular quadrangle narrower anteriorly (0.49 mm) than posteriorly (0.53 mm) and longer (0.54 mm) than wide. Clypeus height large, 1.7 times AME diameter. Sternum

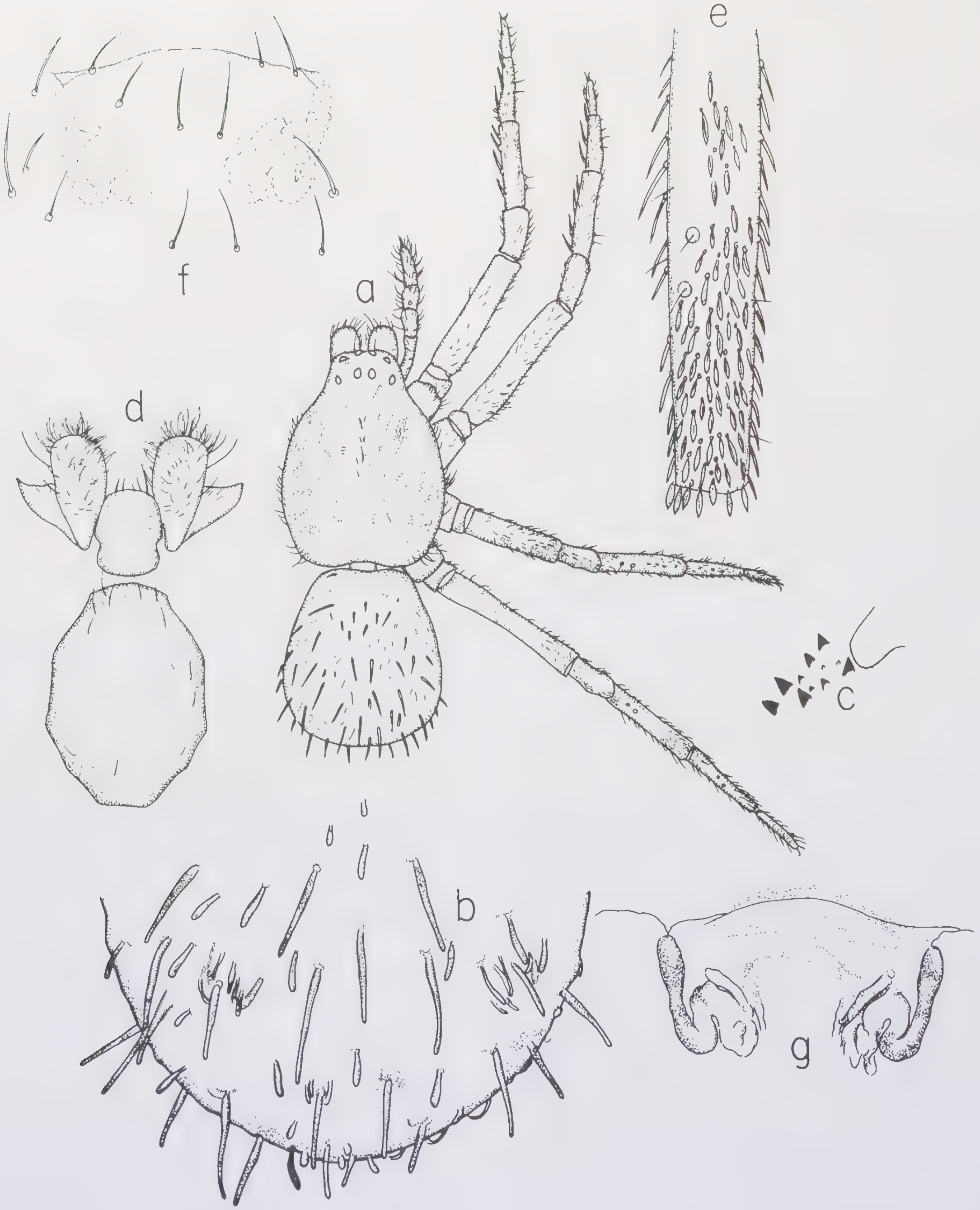

Fig. 116. Female *Borboropactus mindoroensis* n. sp. (a); abdominal spines (b); cheliceral teeth (c); sternum, labium, and maxillae (d); right metatarsus III (e); and dorsal (f) and ventral (g) views of epigynum.

yellow, shape similar to *R. bangkongeus*, with two transverse rows of 12 setae (six per row). Labium yellowish brown longer (0.68 mm) than wide (0.63 mm) and distal margin truncate with five setae. Maxillae yellow with brown lateral margins and yellowish brown scopulae, longer than wide tapered base. Chelicerae reddish brown, short and robust, promargin and retromargin with four teeth each and with five minute teeth in between. Legs long and slender, I and II marked with two or three longitudinal stripes, III and IV black to reddish brown except yellow base of femora and middle of tibia. Right tibia I with nine ventral spines (2-2-2-2-1)

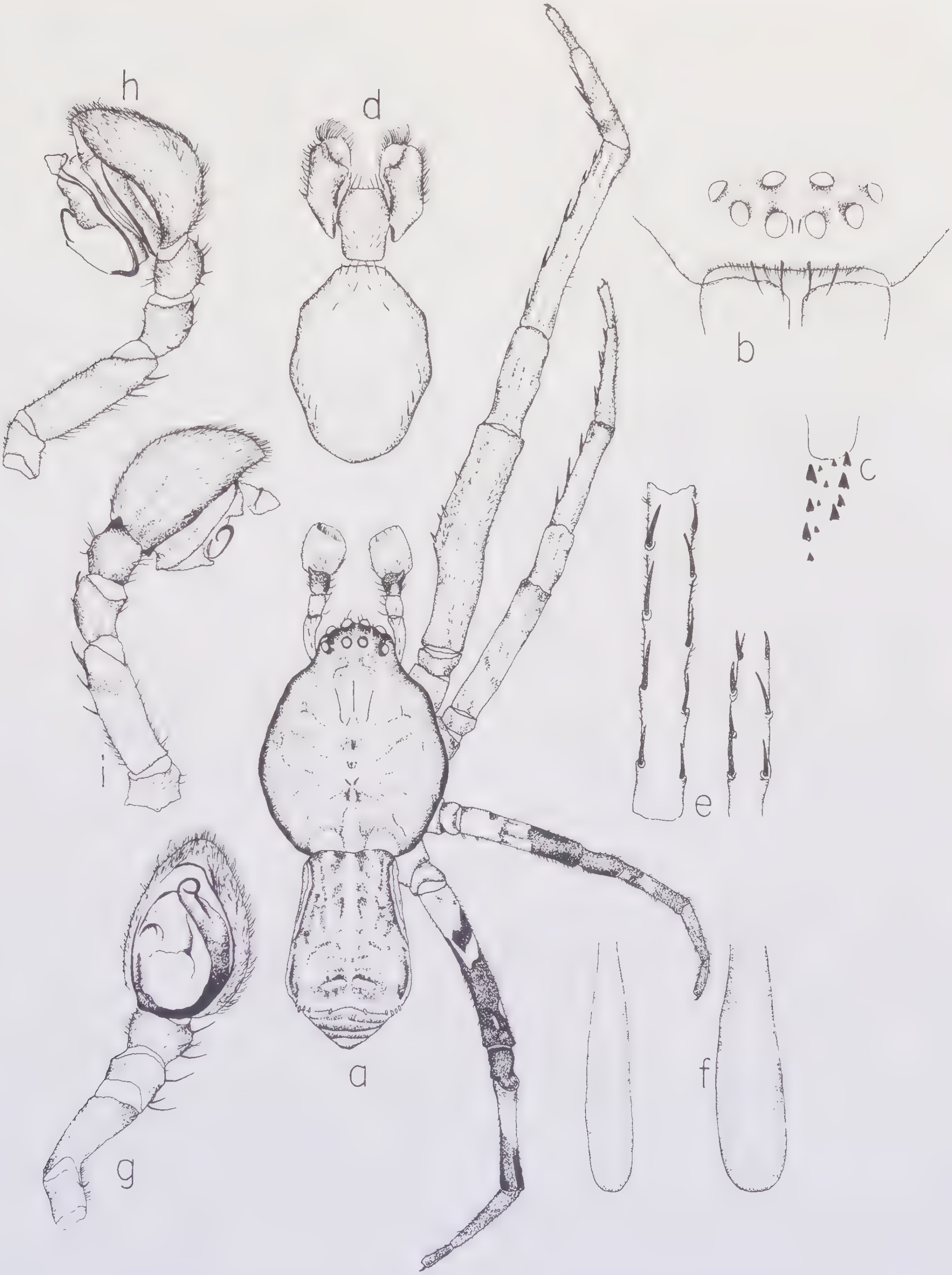

Fig. 117. Male *Borboropactus umaasaeus* n. sp. (a); frontal view of carapace (b); cheliceral teeth (c); sternum, labium, and maxillae (d); venter of tibia I and metatarsus I of right leg (e); clubbed spines (f); and ventral (g) and lateral (hi) views of pedipalp.

and left with ten (2-2-2-2-2). Metatarsi with seven (2-1-2-2) ventral spines on the left and six (2-2-2) in the right. Metatarsus I/tarsus I = 2.09. Tarsi two-clawed without claw tuft, each claw with a subbasal tooth. Leg formula 1432. Pedipalp yellowish brown with brown patches in subapex of femur, middle and base of patella, and base of tibia. Retrolateral tibial apophysis very short and peg-like. Tibia bears a long dorsal seta with two trichobothria on its right and four more subbasally, prolateral with nine or ten setae. Cymbium ovate ventrally and convex in lateral view, yellow with reddish brown conductor and part of tegulum. Embolus short and coiled, its trunk passing the deeply notched conductor. Basal tegulum ridge partially swollen with an ovoid opening.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.95	1.70	4.00	2.30	1.10	13.05
2	2.40	1.05	2.10	1.55	1.00	8.10
3	2.30	0.95	2.35	1.75	0.80	8.15
4	2.75	1.00	2.15	1.80	0.88	8.58
Pedipalp	0.95	0.40	0.40	–	1.05	2.80

Abdomen longer than wide, mottled brown with truncated anterior margin, longitudinally striated anterolaterals, and transversely ridged and tapered posterior margin. Dorsum of abdomen with clavate spine in the posterior one half, arranged in eight or nine transverse rows. Venter yellowish with relatively thicker setae anterior to the spinnerets. Anterior pair of spinnerets converging and more robust than the posterior pair.

Etymology: Taken from the Tagalog word ‘umaasa’, which means hoping, + eus.

Natural history: The holotype male was netted from the levee of irrigated rice in September.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan, Aborlan, Palawan National Agricultural College (PNAC) Vill., holotype male, 26 September 1987, A.T. Barrion.

Distribution: Philippines.

Borboropactus bangkongeus new species
(Fig. 118a–i)

Description:

Male: Total length 6.50 mm. Cephalothorax 3.27 mm long, 2.53 mm wide, 1.33 mm high. Abdomen 3.23 mm long, 2.17 mm wide, 2.20 mm high. Cephalothorax red with fine black hairs and white bands emanating from the indistinct fovea. Three pairs of white bands extended to lateral margins of cephalothorax, cephalic white band, thin V-shaped, running from lower side of ALE and PLE to foveal area where they converge basally and split shortly in the thoracic area. Cephalic area protruded and narrower than the thoracic area. Eight eyes, all clear, with narrow black rings, in two recurved rows, AE row more strongly recurved than PE row but shorter (1.30 mm) than PE row (1.65 mm). Eye diameter (mm): ALE = PLE = 0.17, PME = 0.15, AME = 0.13. Eye separation: AME–AME nearly as long as one eye diameter (0.12 mm), AME–ALE about 0.60 AME diameter, PME–PME equal to one AME diameter, PME–PLE 1.53 times PME or 1.80 times AME diameter. Median ocular quadrangle longer (0.47 mm) than wide (0.40–0.43 mm), broader behind (0.43 mm) than in front (0.40 mm). Clypeus height large, 1.30 times AME diameter and as wide as ALE diameter. Sternum brown and clothed with fine hairs, one third longer than wide, narrowed anteriorly and posteriorly except for truncate anterior margin posterior to labium, sternum distinctly connected to carapace by transverse sclerotization in between coxae. Labium reddish brown, longer (0.55 mm) than wide (0.45 mm) beyond midlength of maxillae, distal margin straight with six setae. Maxillae similar to labium in color except for yellow area posterior to scopulae, longer than wide and narrowed basally. Chelicerae moderately small and stout with nine teeth, four promarginals, with a small subbasal tooth, and five retromarginals, with the distal and subbasal teeth the largest. Dorsal and inner portion of each chelicera with long hairs. Legs yellow-brown with ridges and patches of dark brown, I and II longer and stouter than III and IV. Spination in femora I = 0-9-3-0, II = 0-0-0-0, III = 1-1-0-0. Spines in dorsum and venter of femora III and IV clavate, and peg-like in venter of femora I. Basal one half of femora I prolateral constricted. Tibia I with nine (2-2-2-2-1) ventral spines, similar to II, III and IV without spines but each bears three trichobothria dorsally in the apex of basal one third of tibia; metatarsi I and II with six (2-2-2) spines, III and IV spineless. Metatarsus I/tarsus I = 2.05. Tarsi two-clawed without claw tuft, each claw with a median tooth. Leg formula 1423. Pedipalp nearly as long as femora IV, yellow-brown with dark brown retrolateral tibial apophysis and posterior of cymbium. Retrolateral tibial apophysis bluntly rounded at tip and one third shorter than tibial diameter at that point. Dorsum of tibia with a long erect seta, longer than tibial length, and two pairs of trichobothria posterior to the seta. Prolateral of tibia with two setae and a group of hairs. Cymbium strongly convex in basal one third, and one fourth longer than wide. Embolus very short and coiled, located in the midapical portion of tegulum, apex curved towards the deep notch of conductor and its lower arm borne at the base of the lateral extension of conductor with a slightly notched distal margin. Tegulum moderately swollen basoventrally.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.33	1.45	3.25	1.95	0.95	10.93
2	2.25	0.90	1.93	1.30	0.75	7.13
3	1.85	0.78	1.65	1.60	0.68	6.56
4	2.35	0.70	1.73	1.65	0.75	7.18
Pedipalp	0.78	0.38	0.28	–	0.90	2.34

Abdomen brown-yellow with margin of cardiac area dark brown and longitudinal white stripes laterally and

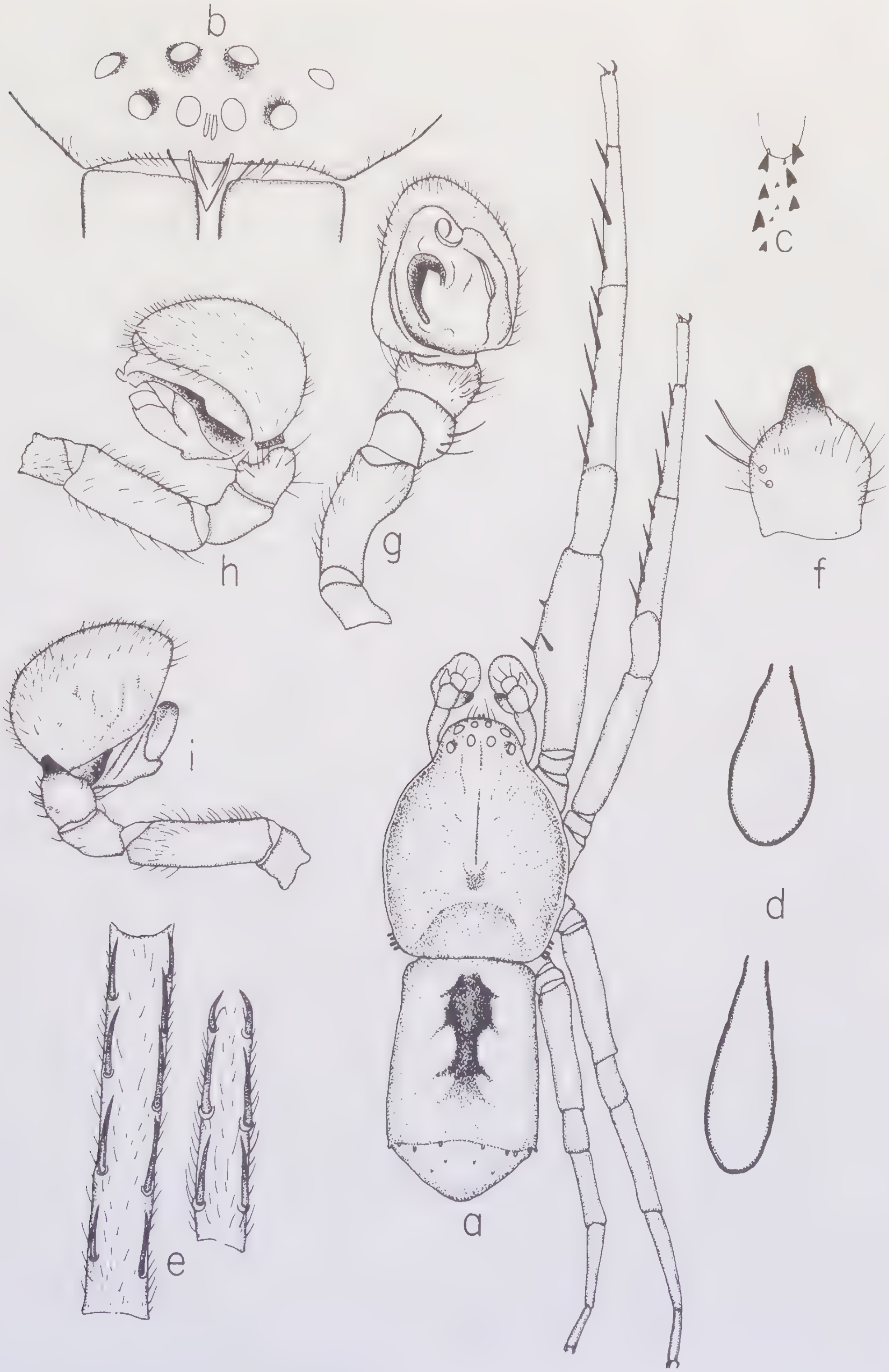

Fig. 118. Male *Borboropactus bangkongeus* n. sp. (a); frontal view of head (b); cheliceral teeth (c); clubbed spines (d); venter of tibia I and metatarsus I of right leg (e); retrolateral tibial apophysis (f); ventral (g) and lateral (hi) views of pedipalp.

medially, longer than wide with truncate and elevated anterior margins. Entire dorsum of abdomen clothed with squamose clavate hairs and setae, apical one half with two pairs of circular brown sigillae. Posterior one fifth tapers to a point, with eight transverse ridges, first ridge with five clavate white and brown spines, next ridge with three, third and fourth with two each, and the rest, toward posterior tip, with more. Venter of abdomen yellow-brown with dark brown lateral edges, median area lined with thin clavate brown hairs. Spinnerets only visible ventrally, anterior spinnerets more robust than the wide-apart posterior pair.

Etymology: The specific epithet is 'bangkong', a Tagalog word for curvature.

Natural history: The male holotype specimen was collected from yellow pan trap set in the middle of an upland ricefield in September and the paratype male was from kerosene light trap (KLT) in August set in slash-and-burn upland rice with a secondary dipterocarp forest.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Caliraya, Mahipon Vill., one male, holotype, 23 September 1985, M. Perez; Quezon Prov., Real, Llavac Vill., paratype one male, 20 August 1984, R. Apostol.

Distribution: Philippines.

Remarks: The paratype male has a brown cardiac area, without white bands in cephalothorax, with clavate setae in lateroposterior thoracic area, and four peg-like teeth in between promarginal and retromarginal teeth.

Genus *Cupa* Strand

Cupa Strand, 1906. In Boesenberg and Strand, Abh. Senckenb. Naturf. Ges. 30: 265.

A small genus of medium-sized thomisids known only from Japan and China. *Cupa* is distinguished from other genera by its cephalothorax, which is smooth, poorly haired, and nearly as long as wide; lateral eyes strongly developed, AME smaller than PME; MOQ nearly as long as wide and anteriorly narrower; clypeus height large, wider than AME–AME separation; sternum almost as long as wide; labium broader than long; chelicerae with two teeth on promargin and three teeth on the retromargin; legs with distinct setae, formula 1243; abdomen subglobular to nearly as long as wide, without tubercles and granulations; male bulb simple, longer than wide, and bears a large conductor; and female epigynum simple, small, hoodless, short intromittent canal, and small ovoid spermathecae.

Cupa kalawitana new species
(Fig. 119a–f)

Description:

Male: Total length 4.05 mm. Cephalothorax 2.05 mm long, 1.88 mm wide, 1.13 mm high. Abdomen 2.00 mm long, 1.50 mm wide, 1.35 mm high. Cephalothorax reddish brown, convex, and poorly haired, longer than wide with head region narrower than thorax, fovea distinct with three pairs of striae directed towards thoracic groove, posterior end of thorax gradually sloping, lower than cephalic and indented anterior to pedicel. Eight eyes in two recurved rows. LE > ME. Eye diameter (mm): ALE = 0.18, PLE = 0.16, AME = 0.06, PME = 0.05. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.13, PME–PME = 0.20, PME–PLE = 0.25, PLE–ALE = 0.15. Median ocular quadrangle narrower in front (0.23 mm) than behind (0.30 mm), both widths less than length (0.35 mm). Clypeus moderately wide, 1.36 times AME separation or 2.5 times AME diameter. Broad triangular plate anterior to clypeus and base of chelicerae present, its median with a deep cleft. Sternum reddish brown, similar to labium and maxillae, rough with fine hair borne on minute tubercles, as long as wide, twice indented shallowly opposite each coxae, anterior indented truncately, accommodating base of labium, posterior end rounded between coxae IV. Labium a little longer than wide and beyond midlength of maxillae, gradually tapers anteriorly, forming a shallow yellow concave distal end with brown hairs. Maxillae slender, indented on entire inner lateral margin and only at midhalf on the outer lateral margin, distal end slightly converging, with yellow scopulae. Chelicerae reddish brown, robust basally and tapering toward fang, promargin with thick scopulae and two teeth (large basal and small apical), and retromargin with two (large and bifurcated basal and moderately large apical) teeth. Legs moderately long and slender, brown except reddish brown femora, femora I–IV rough with small hairs borne on tubercles. Spination in femora I = 2-0-4-0, II = 2-0-0-0, III = IV = 2-0-0-1; tibiae I = II = 2-10(2-2-2-2-2)-1-1, III = 2-4(1-1-2)-0-0, IV = 2-4(1-1-2)-0-1; metatarsi I = II = 0-6-2-2, III = IV = 0-1-2-2. Tm I = 0.60. Tarsi two-clawed without claw tuft, each claw with at least six teeth. Leg formula 2143. Pedipalp as long as combined length of patella and tibia IV, RTA thumb-like and pointed and as long as diameter of tibia, VTA and ITA absent. Tegular apophysis slightly hooked at tip, main body parallel to the slenderly triangular and apically hooked conductor. Embolus very short.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	0.78	2.40	1.60	1.08	8.11
2	2.35	0.75	2.45	1.65	1.03	8.23
3	1.65	0.60	1.50	1.13	0.80	5.68
4	1.80	0.58	1.48	1.30	0.85	6.01
Pedipalp	0.81	0.35	0.25	–	0.65	2.06

Abdomen globular and setaceous, brown with yellow mottles and two pairs of globular brown spots, laterals with almost dichotomously branched yellow stripes, venter pale brown and finely haired in between spinnerets and epigastric furrow. Book lungs brown with a grayish brown band in between. Spinnerets in a ring of

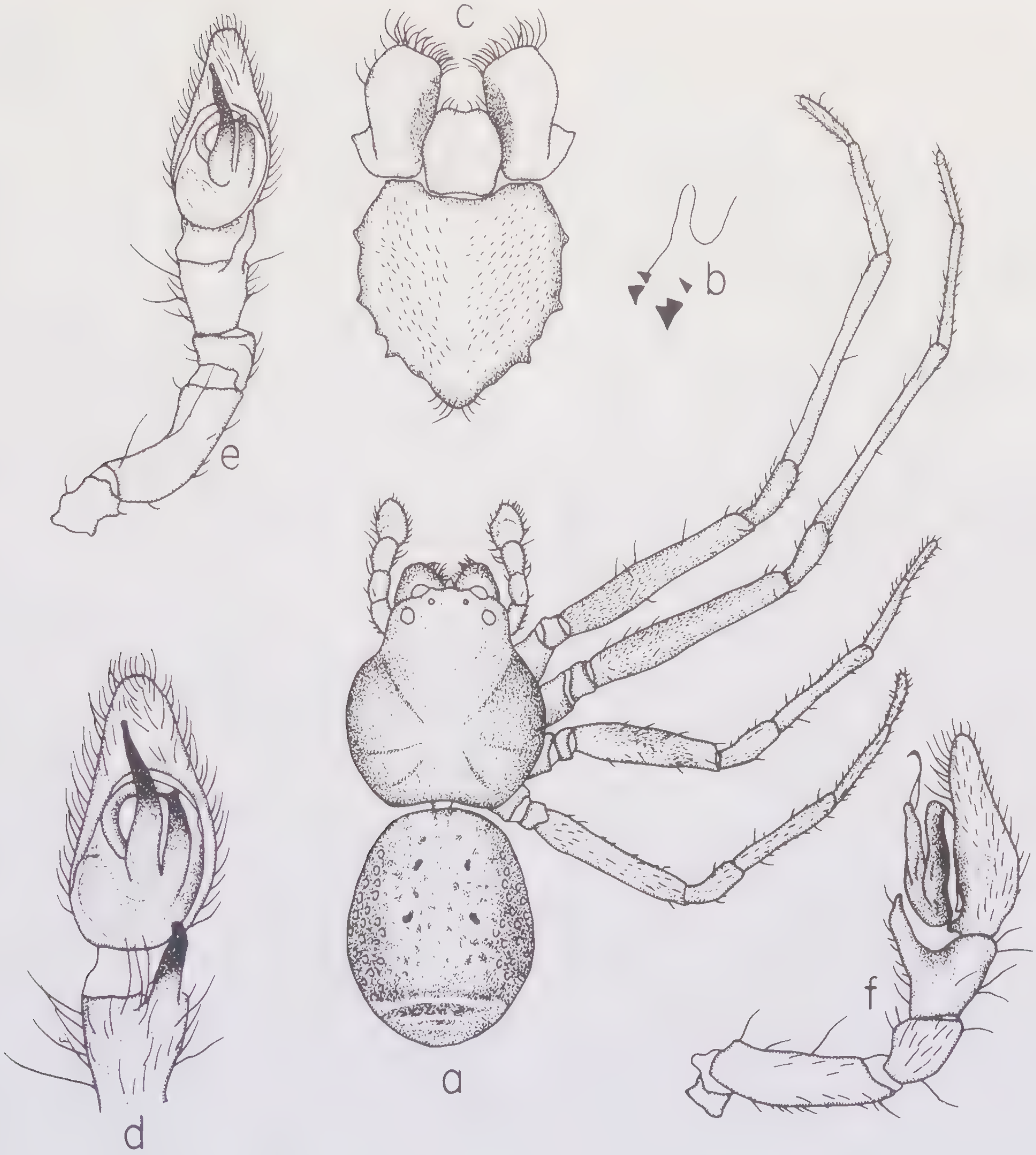

Fig. 119. Male *Cupa kalawitana* n. sp (a); cheliceral teeth (b); sternum, labium, and maxillae (c); ventral view of pedipalp's tibia and tarsus (d); entire pedipalp (e); and lateral view of pedipalp (f).

brown hairs, anterior pair larger than the posterior and median pair.

Etymology: Named after the shape of conductor and embolus in Tagalog, 'kalawit' (long and hook-like).

Natural history: The single specimen was collected from yellow pan trap set in the border of upland rice in September.

Material examined: Philippines: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 22 September 1984, R. Apostol and A.T. Barrion.

Distribution: Philippines.

Genus *Tharrhalea* L. Koch

Tharrhalea L. Koch, 1875. Arachn. Austral. 1(1): 604.

A moderately small genus of thomisid spiders consisting of 11 nominal species. The diagnostic characters of the genus are the longer than wide carapace; cephalic area almost parallel-sided and prominent from the thoracic area without setae or hairs; AE straight in dorsal view and almost as long as the strongly recurved PE row; ALE large, light-colored. and bulges out of cephalic area in dorsal view; eye diameter: ALE > PLE > AME > PME; PME dark and small, closer to each other than to PLE and similarly closer to ALE than to PLE; MOQ almost squarish, except height a little shorter than width; sternum longer than wide, similar to labium and maxillae. Abdomen ovoid, with setae, but lacks prominent dorsal markings. RTA more developed than VTA, bulb without apophysis, and embolus thin and moderately long. Epigynum with a median moderately sclerotized plate and spermathecae ovoid to pear-shaped.

Tharrhalea mariae new species
(Fig. 120a–d)

Description:
Male: Total length 3.60 mm. Cephalothorax 1.70 mm long, 1.60 mm wide, 1.00 mm high. Abdomen 1.90 mm long, 1.40 mm wide, 1.15 mm high. Cephalothorax yellow-brown with black eye margins broadest in ALE, with light brown slightly V-shaped dorsal band, margins of clypeus with four long black setae and one posterior to each lateral eye. Eight eyes in two rows, slightly recurved AE, a little longer than strongly recurved PE row. Eye diameter (mm): ALE = 0.18, PLE = 0.10, AME = 0.08, PME = 0.05. Eye separation (mm): AME–AME = AME–ALE = 0.15, ALE–PLE = 0.24, PLE–PME = 0.30, PME–PME = 0.18, PME closer to each other than to PLE and similarly closer to ALE than to PLE. MOQ almost a square, anterior as long as the posterior, height slightly shorter than anterior width. Clypeus height large, 2.25 times AME diameter. Sternum yellow with dark yellow margins, slightly longer than wide (0.70 : 0.65 mm), concave anteriorly and rounded posteriorly in front of coxae IV. Labium pale reddish brown, longer than wide, apical margin yellow and truncate. Maxillae yellow except brown apical one half of outer lateral margins. Chelicerae light brown with a brown and a reddish brown spot subapically, promargin with two teeth and a small retromarginal tooth. Legs brown, long and slender, spinous and hirsute in tibiae, metatarsi, and tarsi of legs I and II. Spination in femora I = 3-0-3-2, II = 3-0-2-2, III = 3-0-2-2, and IV = 3-0-1-1; tibiae I and II each with eight (2-2-2-2) ventral spines; and metatarsi I and II each with four (2-2) ventral spines. Leg formula 2143. Pedipalp slightly shorter than femur IV, longer than either tarsus I or II; tibia with at least four dorsal trichobothria and with a long dorsal spine, its length almost as long as patella and tibia; long and thin RTA, sclerotized, black, and seta-like; VTA yellow, short, and apex curved towards the medianly bulbous tegulum, without apophysis; embolus moderately thin and long, emanates from base of tegulum, forming a half-circle loop.

Abdomen ovoid, yellow-brown except black transverse interrupted band subposteriorly, clothed with long setae arranged in six longitudinal rows or seven to nine transverse rows; venter with a broad median longitudinal brown band running from spinnerets to midlength of abdomen; laterals each with two or three longitudinal gray-black lines. Anterior pair of spinnerets distinctly broader than the posterior pair and converging apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.30	0.70	2.30	2.00	1.05	8.35
2	2.40	0.80	2.40	2.05	1.10	8.75
3	1.40	0.40	1.20	0.85	0.60	4.45
4	1.45	0.50	1.20	0.90	0.50	4.55
Pedipalp	0.50	0.20	0.20	–	0.52	1.42

Etymology: Named after ‘Maria’ of Mt. Makiling.
Natural history: The holotype male was collected from Malaise trap set in upland dibbled rice on Mt. Makiling near Jamboree Site in August.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna, Los Baños, Mt. Makiling, holotype male, 18 August 1988, A.T. Barrion and B. Garcia.
Distribution: Philippines.

Genus *Stiphropus* Gerstaecker

Stiphropus Gerstaecker, 1873. In Decken, Reisen in Ostafrica 3(2): 478.
Crysillus O.P. Cambridge, 1883. Proc. Zool. Soc. Lond. 1883: 1358.
Casturopoda O.P.Cambridge, 1883. Proc. Zool. Soc. Lond. 1883: 359.
Apsectromerus Simon, 1885. Bull. Soc. Zool. Fr. 10: 16.
Stiphropus Simon, 1886. Act. Soc. Linn. Bord. 40: 170.

Stiphropus Gerstaecker is one of the least known paleotropic thomisid genera of Gondwana origin (Ono 1980), with 18 nominal species. Members of the genus show moderately flattened cephalothorax and abdomen; cephalothorax longer than wide; cephalic area narrower than the thorax; eyes in two rows, LE on prominent tubercles closer to each other than to ME, PE row more recurved than AE row; eye diameter: ALE > PLE > AME > PME; MOQ much broader behind than in front; clypeus height large; sternum longer than wide; labium longer than wide; leg formula 2143 or 1243; pedipalps and legs with branched hairs; patella of pedipalp usually longer than tibia; VTA and RTA strongly developed; cymbium clothed with branched setae; epigynum simple with a wide median unsclerotized area; abdomen subglobular with a median pair of small to very large sigilla, usually a trio of small sigilla present anterior to the large pair.

Stiphropus sangayus new species
(Fig. 121a–c)

Xysticus sp. Barrion, 1980. Grad. Sch. Univ. Philipp. Los Baños: 72–73.

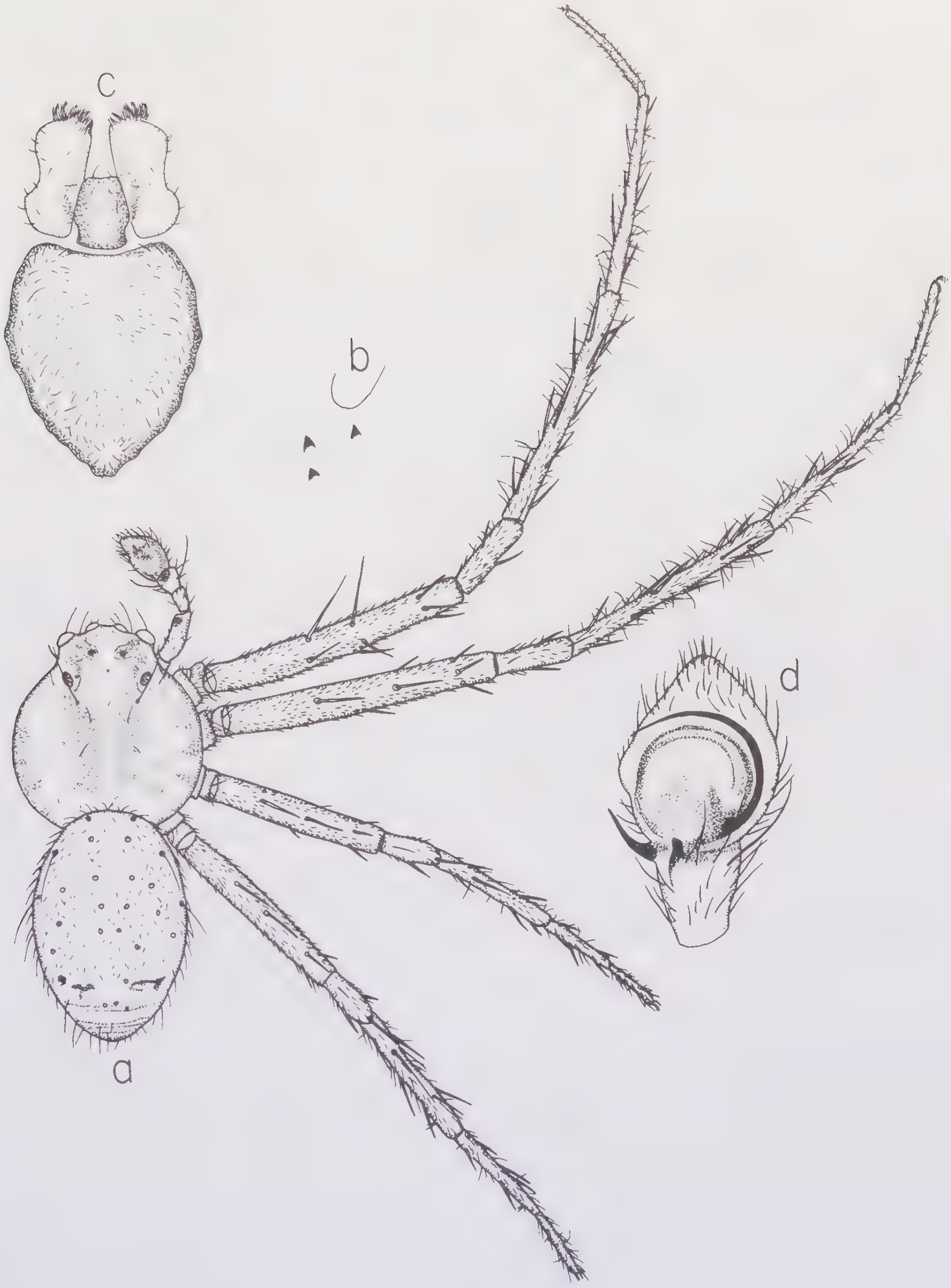

Fig. 120. Male *Tharrhalea mariae* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

Description:

Female: Total length 3.50 mm. Cephalothorax 1.50 mm long, 1.38 mm wide, 0.88 mm high. Abdomen 2.00 mm long, 2.02 mm wide, 1.00 mm high. Cephalothorax moderately flat, reddish brown except white eye margins and a pale yellow U- to H-shaped band in foveal area. Cephalic area with straight lateral margin. Eight eyes in two rows, PE row longer (0.90 mm) and more recurved than AE row (0.70 mm). Eye diameter (mm): ALE = PLE = 0.10, AME = 0.06, PME = 0.04. Eye separation: AME–AME 1.5 times eye diameter, AME–ALE = PME–PME 2.5 times diameter of AME, PME–PLE 4.7

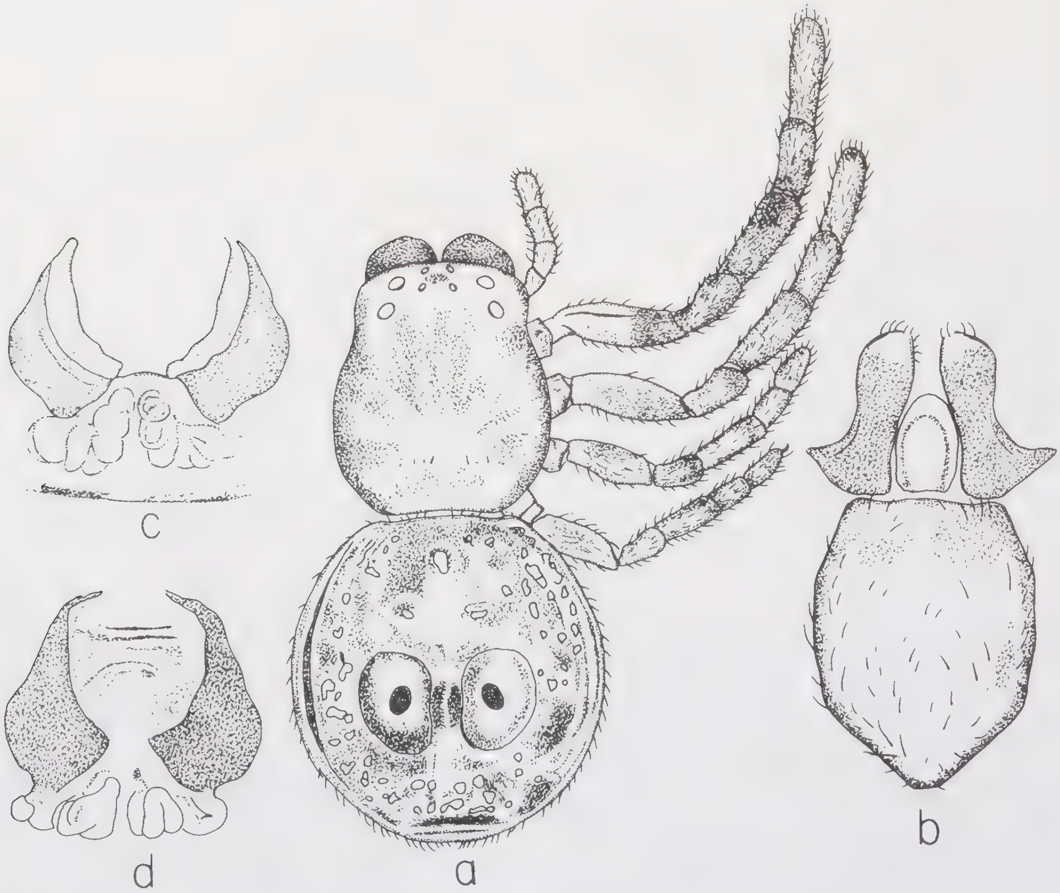

Fig. 121. Female *Stiphropus sangayus* n. sp. (a); sternum, labium, and maxillae (b); and dorsal (c) and ventral (d) views of epigynum.

times AME diameter, PLE–ALE 2.2 times diameter of AME. Median ocular quadrangle much broader behind (0.29 mm) than in front (0.21 mm), anterior width very slightly longer than length (0.20 mm). Clypeus height small, 1.3 times AME diameter. Sternum longer than wide, yellow-brown to gray-brown, anterior margin slightly concave, lateral margins without cavities opposite coxae, and posterior end small and truncate between coxae IV. Labium reddish brown, 1.3 times longer than wide, anterior end rounded. Maxillae pale reddish brown with white anterior end, inner lateral sides straight, outer lateral sides concave at midhalf to accommodate coxae of pedipalp. Chelicerae reddish brown, flat and subtriangular frontally, and bearing small fangs. Promargin with six teeth in decreasing length from anterior to posterior. Legs all reddish brown, without strong spines but almost densely haired. Tarsi each with two weak claws. Leg formula 2143. Pedipalp almost as long as combined length of metatarsi II and tarsi II, tarsi with numerous plumose to club-like hairs and bearing a very minute claws.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.86	0.51	0.61	0.48	0.88	3.34
2	0.90	0.49	0.64	0.50	0.83	3.36
3	0.68	0.43	0.50	0.35	0.40	2.36
4	0.79	0.40	0.63	0.40	0.41	2.63
Pedipalp	0.38	0.30	0.28	–	0.36	1.32

Abdomen spherical, grayish brown to light or dark brown, a pair of large bean-shaped light brown spots present dorsomedially, each with a small brown circular spot in the center, anterior one third and posterior one third with three and two brown spots, respectively. Large bean-shaped spots separated by a distance equal to one third diameter of each spot. Venter light or dark brown with yellow tinge, five pairs of yellow ovoid spots present between reddish brown and yellow epigynum and yellow-brown spinnerets. Anterior spinnerets close to each other, unlike the widely separated posterior pair, both pairs inside a yellow circular ring. Epigynum bears a pair of sclerotized C-shaped bands facing each other, with their apices narrowly separated, in between bands with two transverse and one convex striae. Spermathecae multispirally arranged, forming a fist-like structure.

Etymology: Named after the branch ('sanga' in Tagalog) hairs in the legs.

Natural history: The holotype female was collected from rice plants in January and the immature paratype female was taken from bark of *Leucaena leucocephala* in March.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype female, 10 January 1980, A.T. Barrion; San Pablo, Wawa Vill., immature female, 10 March 1981, M. Perez.

Distribution: Philippines.

Genus *Loxobates* Thorell

Loxobates Thorell, 1877. Ann. Mus. Civ. Stor. Nat. Genova 10: 495.

Loxobates Thorell is a poorly known genus of medium-sized thomisid spiders of Southeast Asian origin and currently represented by only six nominal species. The diagnostic features of *Loxobates* are the carapace as long as broad or slightly longer than wide, convex, poorly hirsute, with cephalic and clypeus with short setae; all eyes on whitish tubercles, ALE and PLE tubercles touching each other; eye diameter: ALE > PLE > AME > PME; eye separation: AME–AME > AME–ALE, PME–PLE > PME–PME; MOQ slightly longer than wide; clypeus height large; chelicerae without tooth; sternum nearly as long as wide; labium longer than wide; leg formula 2143; pedipalp of male with VTA, ITA, and RTA present; VTA strongly developed; RTA less developed than VTA, normal; simple bulb without apophysis; short embolus filiform; epigynum of the female bears a central hood, short intromittent canal, and kidney-shaped spermathecae. Abdomen oblongate, much longer than wide, and rounded, usually at both ends.

Loxobates kawilus new species
(Fig. 122a–c)

Description:

Male: Total length 3.65 mm. Cephalothorax 1.25 mm long, 1.30 mm wide, 0.85 mm high. Abdomen 2.40 mm long, 0.80 mm wide, 0.80 mm high. Cephalothorax light red brown except yellow patch in foveal area, moderately convex and higher in eye area, head narrow and distinct from broad thoracic area, cephalic area bears more setae than thoracic area. Eight eyes, all in tubercles except PME in two recurved rows, AE row short (0.50 mm) and more strongly recurved than the wider PE row (0.64 mm), lateral tubercles touching each other, and LE > ME. Eye area less than one half width of cephalothorax. Eye diameter (mm): ALE = 0.15, PLE = 0.13 AME = 0.08, PME = 0.06. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.08, PME–PME = 0.05, PME–PLE = PLE–ALE = 0.19. Median ocular quadrangle rectangular, much wider in front (0.25 mm) than behind (0.15 mm), posterior widths about one third of length (0.45 mm). Clypeus bears five long setae, height large, almost twice AME diameter and one half longer than AME–AME. Sternum yellow similar to labium, maxillae, legs, pedipalps, chelicerae, and abdominal venter, wider (0.75 mm) than long (0.70 mm), anterior end concave and posterior end narrowly emarginate between coxae IV. Labium bell-shaped, wider than long, with a rounded anterior margin beyond midlength of maxillae. Maxillae longer than wide, outer lateral margin concave opposite coxae of palps, distal end moderately rounded to truncate. Chelicerae vertical, twice longer than broadest width, with scopulae but without teeth. Legs I and II brown, very long and slender with distinct spines, II and IV short and yellow without strong spines. Spination in femora I = 7-1-5-2, II = 7-1-2-2; tibia I 2-8-3-3, ventral spines in four oblique pairs, II = 2-7-2-2, with all ventral spines in zigzag arrangement, starting gradually from basal pair; metatarsi I = 0-6(2-2-2)-3-3, II = 0-6(2-2-2)-3-4. Metatarsus I/tarsus I = 2.29. Tarsi two-clawed, each with 10–19 teeth in leg I and clubbed claw tuft. Leg formula 1243. Pedipalp almost as long as combined length of metatarsi III and tarsi III. RTA sclerotized, normal, and sharply pointed at tip. ITA absent. DTA strongly developed and sickle-shaped with a moderately long and broad blade or arm. Embolus long, thin, and filiform. Tegular apophysis not developed. Cymbium obliquely truncate apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.45	0.92	3.20	2.82	1.23	11.62
2	3.43	0.90	3.13	2.67	1.20	11.33
3	1.33	0.40	1.17	0.93	0.57	4.40
4	1.40	0.38	1.05	0.98	0.60	4.41
Pedipalp	0.46	0.28	0.20	–	0.55	1.49

Abdomen elongate, 2.6 times longer than wide, broad anteriorly and tapering posteriorly, pale yellow with brown fine setae; dark brown anal tubercle and posterior end of abdomen, and eight yellow-brown abdominal spots in two longitudinal rows (or four transverse rows), posterior one fourth of abdomen bears six whitish transverse lines. Abdominal venter yellow with brown areas anterior to epigastric furrow and anterior to spinnerets. Anterior spinnerets brown, close to each other, stout at base, with whitish posterior end of second segment. Posterior spinnerets widely separated, distance in between almost the transverse length of base of anterior spinnerets.

Etymology: Named after the sickle-shaped ('kawil' in Tagalog) VTA.

Natural history: The holotype specimen was collected by D-Vac suction machine from slash-and-burn upland rice in September while the paratype male was FARMCOP-collected in July in irrigated rice.

Material examined: PHILIPPINES: *Luzon Is.*, Abra Prov., Anayan, Anayan Vill., holotype male, 22 September 1985, M. Perez and E. Rico; Ifugao Prov.,

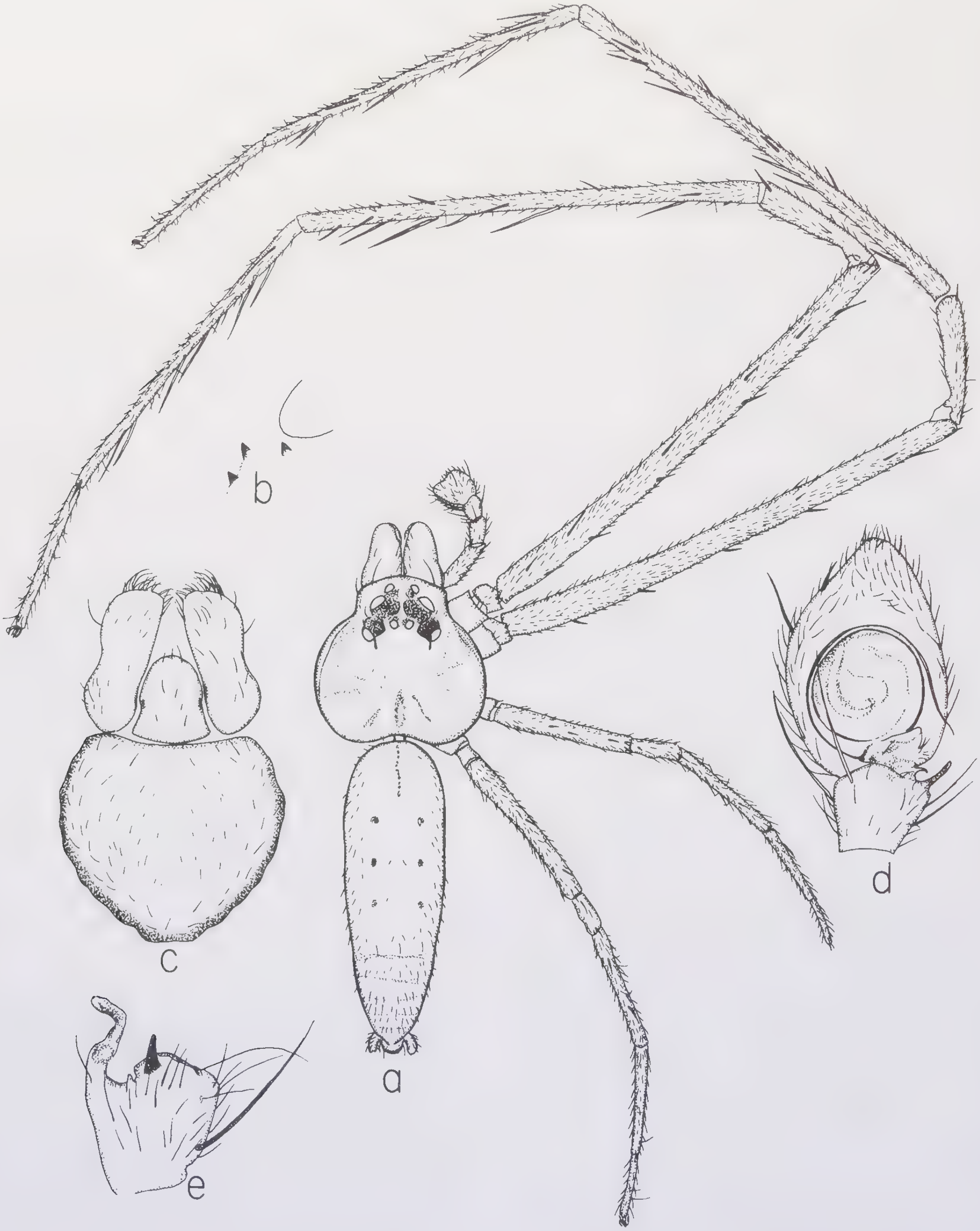

Fig. 122. Male *Loxobates kawilus* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); ventral view of pedipalp (d); and retrolateral view of tibia (e).

Kiangan, paratype male, 18 July 1989, G.B. Aquino.
Distribution: Philippines.
Remarks: The paratype male has ten and eight ventral spines in tibiae I and II, respectively, yellow anal tubercle with a brown lateral band, and apex of cymbium more truncated.

Loxobates masapangensis new species
(Fig. 123a–e)

Description:
Male: Total length 2.63 mm. Cephalothorax 1.08 mm long, 1.20 mm wide, 0.50 mm high. Abdomen 1.55 mm

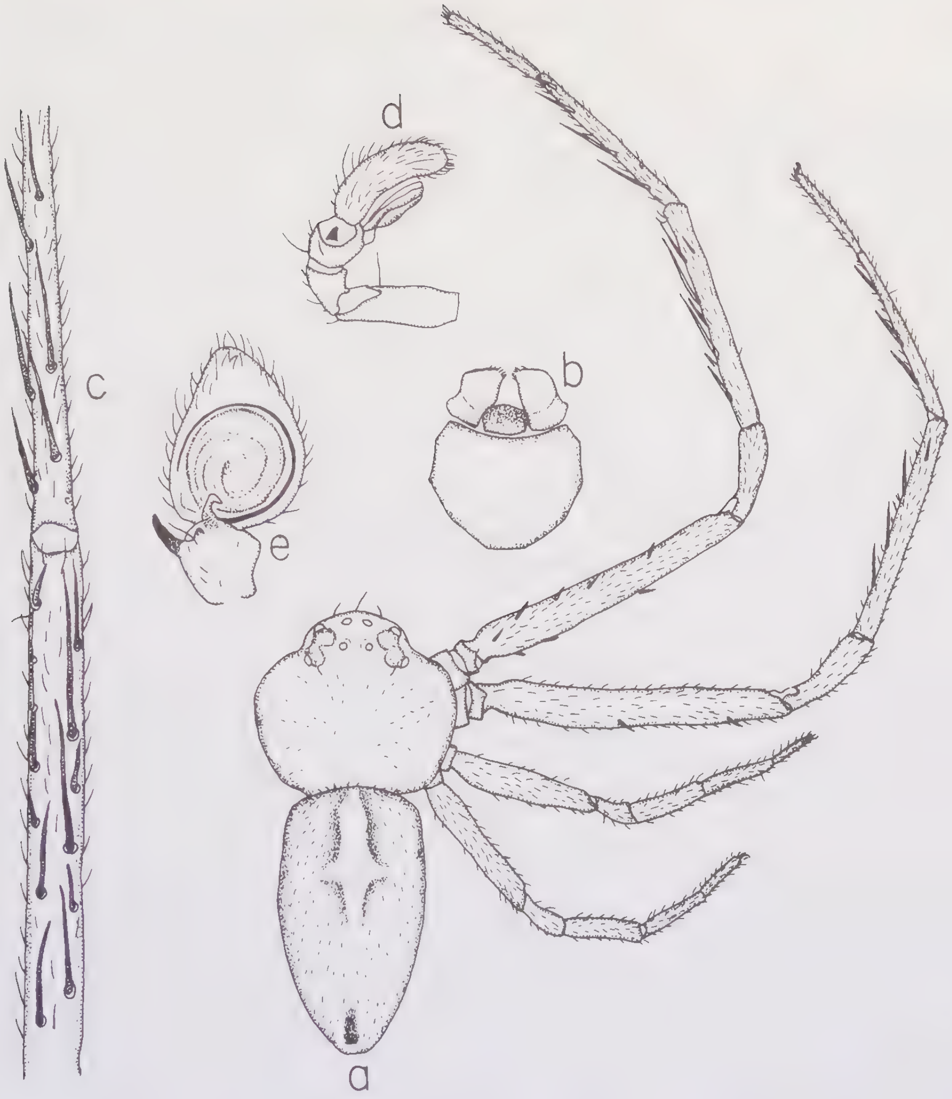

Fig. 123. Male *Loxobates masapangensis* n. sp. (a); sternum, labium, and maxillae (b); ventral view of tibia I and metatarsus I (c); and lateral (d) and ventral (e) views of pedipalp.

long, 0.83 mm wide, 0.55 mm high. Cephalothorax light brown with eyes black underneath, except AME with the ring only black, dorsum clothed with very fine short hairs, excluding posterior of PLE and clypeus with one and three long setae, respectively. Cephalic area prominent from the broad thoracic area. Eight eyes in two recurved rows, slightly recurved AE row shorter (0.58 mm) than the more recurved PE row (1.19 mm). LE or tubercles touching each other. Eye diameter (mm): ALE = 0.10, PLE = 0.08, AME = 0.06, PME = 0.05. Eye separation (mm): AME–AME = AME–ALE = 0.09, ALE–PLE = 0.16, PME–PME = 0.11, PME–PLE = 0.21. Median ocular quadrangle almost a square except for a slightly wider posterior width (0.23 mm). Clypeus height large, 2.33 times diameter of AME, bears three long setae. Sternum yellow, wider (0.68 mm) than long (0.53 mm), anterior end broadly concave and posterior end truncate between coxae IV. Labium similar in color to maxillae and sternum, slightly wider than long, distal end rounded. Maxillae obliquely converging, longer than wide, distal end obliquely truncated, outer lateral margin partially indented at midhalf. Chelicerae vertical, short with a small fang, and toothless. Legs light yellow-brown, long and slender, particularly I and II, tibia I and II with 13 and eight (four pairs) ventral spines, respectively, and one subapical prolateral spine each. Metatarsi I and II each bear six ventral and two prolateral spines. Metatarsus I/tarsus I = 1.76; TmI = 0.81. Tarsi two-clawed, hidden by thick claw tuft. Leg formula 1243. Pedipalp yellow, longer than combined length of femora and patella of leg IV, RTA a prominently sclerotized and pointed tubercle; ITA absent; VTA stouter than RTA, slightly curved inwards and bluntly rounded at tip. Tegular apophysis not developed, embolus long and filiform, circling around tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.68	0.60	1.38	1.23	0.70	5.59
2	1.70	0.55	1.35	1.25	0.68	5.53
3	0.48	0.25	0.38	0.35	0.30	1.76
4	0.54	0.23	0.46	0.48	0.28	1.99
Pedipalp	0.35	0.10	0.11	–	0.33	0.89

Abdomen brown, slightly sclerotized, and lined with short brown setae, gradually tapered posteriorly and widely rounded anteriorly, moderately flat with yellow venter and five or more longitudinal striae laterally. Spinnerets concealed underneath, second segments of both pairs converging towards each other. Anterior pair more robust than the posterior pair.

Etymology: Named after the type locality.

Natural history: Handpicked from rice panicle in September.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Victoria, Masapang Vill., holotype male, 15 September 1980, M. Perez.

Distribution: Philippines.

Genus *Tmarus* Simon

Tmarus Simon, 1875. Arachn. France 2: 259.
Tmarsus (lapsus) Keyserling, 1880. Spinnen Amerikas. Laterigradae: 137.

Medium-sized thomisids, barely 5 mm long. *Tmarus* Simon has a cosmopolitan distribution, comprising about 170 nominal species. The features of the genus are the dark brown, convex dorsad and longer than wide carapace, prominently produced anteriorly and with long setae; eyes in two transverse recurved rows, LE larger than ME and tubercles of LE developed; eye diameter: ALE > PLE > PME > AME; MOQ almost as long as wide; clypeus wide; chelicerae toothless; labium longer than wide; shield-like sternum slightly longer than wide; setaceous legs long and moderately slender, pale brown, mottled, with legs I and II longer than III and IV, without scopulae or claw tuft; tarsi two-clawed; leg formula 2143; male pedipalp with distinct VTA and RTA, sometimes ITA and DTA present, simple bulb without apophysis, embolus thick and short; female epigynum slightly sclerotized with a median hood, uncovered intromittent orifices, intromittent canal short and thick, spermathecae small, ovoid to globular with surface grooves; abdomen rather angular at lateral margins, longer than wide, bears a conspicuous dorsal tubercle at posterior end (highly visible in lateral view); mottled or spotted brown and chalk-white.

Tmarus dostinikus new species
(Fig. 124a–c)

Description:

Male: Total length 3.57 mm. Cephalothorax 1.32 mm long, 1.35 mm wide, 1.09 mm high. Abdomen 2.25 mm long, 1.05 mm wide, 1.08 mm high. Cephalothorax slightly wider than long, spinous, white cephalic area distinct from reddish brown thoracic area. Eight eyes in two moderately recurved rows, AE row slightly shorter (0.80 mm) than PE row (1.03 mm), PLE tubercle longer than ALE. Eye diameter (mm): ALE = 0.15, PLE = 0.14, PME = 0.08, AME = 0.05. Eye separation: AME–AME = AME–ALE three times AME diameter, PME–PME four times AME diameter, PME–PLE six times diameter of AME, PLE–ALE five times diameter of AME. Median ocular quadrangle wider behind (0.36 mm) than in front (0.25 mm), posterior width slightly longer than length (0.35 mm). Clypeus height large, bears six setae (inner two pairs very long), 5.6 times diameter of AME, and gently sloping. Sternum heart-shaped, yellow, and moderately hairy, longer (0.75 mm) than wide (0.63 mm), truncate anteriorly and pointed posteriorly behind coxae IV. Labium yellow-brown, almost twice longer than wide and beyond midlength of maxillae. Slender maxillae, 3.3 times longer than wide, broadest at midhalf, and slightly concave opposite coxae of pedipalp and midlaterals of labium. Chelicerae whitish yellow, similar to clypeus, almost twice longer than broad (0.60 : 0.33 mm), spinous frontodorsally, and toothed in both promargin and retromargin. Legs uniformly yellow except brown spines, I and II distinctly longer than III and IV, tibia I with four or five ventral spines and II with three only; metatarsi I and II each with six (three pairs) ventral spines. Tarsi two-clawed with undeveloped claw tuft, each claw with at least five teeth in leg I. Leg formula 1234. Pedipalp a little longer than femora IV, stout femora as long as cymbium, RTA short and blunt with two short prolateral setae subapically and a long seta ventrally, ITA absent, DTA blunt, unsclerotized like RTA, short and with a rounded distal end. Dorsum of tibia bears one long seta and about seven trichobothria. Tegular apophysis not developed, embolus thin and spiral, circling the tegulum once.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.86	0.75	2.00	1.55	0.95	7.11
2	1.81	0.73	1.94	1.50	0.85	6.83
3	1.23	0.48	1.20	0.65	0.50	4.06
4	1.35	0.44	0.95	0.58	0.53	3.85
Pedipalp	0.45	0.26	0.20	–	0.45	1.36

Abdomen pale grayish brown with a dorsomedian white, broad and constricted band, uniformly setaceous, elongate, 2.1 times longer than broad, setaceous anterior end truncate to slightly rounded and gradually tapering posteriorly, with a visible anal tubercle and spinnerets. Venter of abdomen pale yellow, finely haired, and bearing a white band laterally. Anterior pair of spinnerets almost parallel to each other, large basally, and second small segments directed towards each other. Posterior pair slender, one half the diameter of basal anterior spinnerets, widely separated, and bearing a black spot in the outer laterobasal one half viewed ventrally.

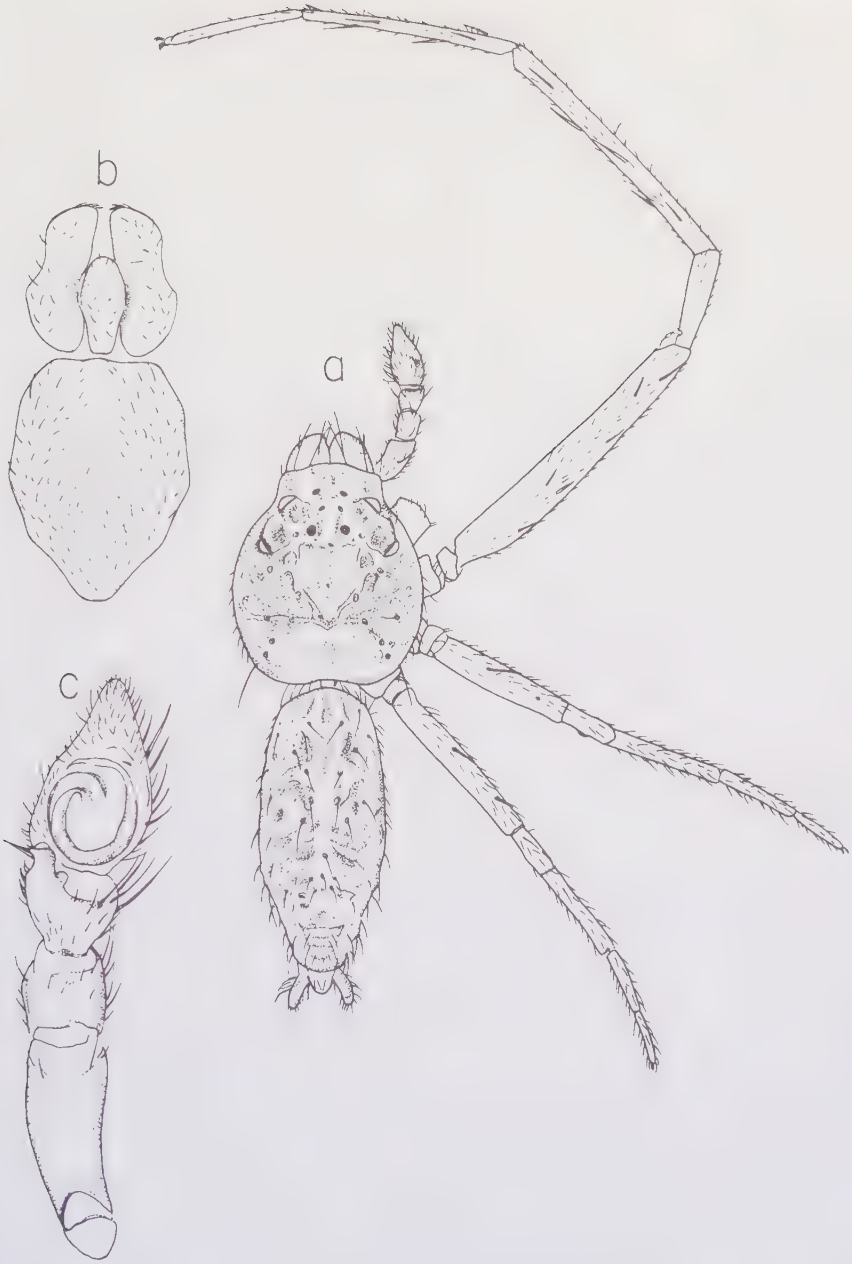

Fig. 124. Male *Tmarus dostinikus* n. sp. (a); sternum, labium, and maxillae (b); and ventral view of pedipalp (c).

Etymology: Named after the paired spines in RTA; in Tagalog 'dos' means two and 'tinik' means spine.

Natural history: Two males were netted from upland rice at panicle initiation stage in August.

Material examined: PHILIPPINES: *Mindanao Is.*, Zamboanga del Sur, Pagadian, Betinan, Padap site, holotype male, 10 August 1979, A.T. Barrion; Molave, BPI Farm, paratype one male, 12 August 1979, A.T. Barrion.

Distribution: Philippines.

Remarks: The paratype male is only 3.10 mm long and with a more whitish abdomen compared to the holotype.

Genus *Monaeses* Thorell

Monastes Lucas, 1846. Explor. Sci. Alger. 1: 192 (preoccupied by *Monastes* Nitzsch, 1840: Aves).

Monaeses Thorell, 1869. Nova Act. Reg. Soc. Sci. Upsal. 3(7): 37.

Mecostrabus Simon, 1903. Ann. Soc. Ent. France 71: 726.

Monaeses Thorell is a moderately large genus of thomisid spiders widely distributed in Africa, South Europe, South America, South Asia, and Australia. It is represented by 22 nominal species, closely resembles *Tmarus* Simon; however, *Monaeses* has flat, longer than wide carapace, marked by short stout setae, and parallel-sided lateral margins; eye tubercles developed, LE borne on separate tubercles; eye diameter: ALE > PLE > PME > AME; MOQ wider than long; clypeus wide and nearly horizontal; chelicerae toothless; sternum usually oval, longer than wide, similar to labium; long legs setaceous, I and II much longer than III and IV. Pedipalp of male with VTA and RTA; simple bulb without apophysis; embolic division long, circling twice around tegulum; long and filiform embolus present. Epigynum bears a hood in the anterior part, intromittent orifices slit and slightly sclerotized, intromittent canal long and winding; spermathecae small, tube-shaped, and twisted; abdomen prominently elongated, long caudal end tail-like, and spinnerets almost at midventer.

Monaeses habamatinikus new species

(Fig. 125a–q)

Description:
Female: Total length 6.81 mm. Cephalothorax 1.48 mm long, 1.16 mm wide, 0.92 mm high. Abdomen 5.33 mm long, 0.96 mm wide, 0.60 mm high. Cephalothorax brownish yellow with light green tinges, longer than wide and moderately dorsoventrally depressed. Cephalic area parallel-sided, slightly recurved clypeus with a deep concave pattern posterior to apical border as reflected by the white band, less spinous than thoracic area, lateral margins brown. Eight eyes in two rows of heterogeneous light and black pattern, borne on tubercles, occuping one fifth of carapace length. LE tubercles larger than ME. AE row shorter (0.66 mm) than PE row (0.83 mm). Eye diameters (mm) in decreasing order: ALE = 0.10, PLE = 0.08, PME = 0.06, AME = 0.04. AME separation three times AME diameter. AME–ALE separation 3.5 times AME diameter. PME–PME separation four times PME diameter. PME–PLE separation 3.7 times PME diameter and 5.5 times AME diameter, subequal to ALE–PME and LE–LE separations. Clypeus height 8.8 times AME diameter, as long as length of PME. Sternum dull yellow, with brown setae ringed gray basally, much longer (0.90 mm) than wide (0.50 mm), oblong with straight distal and tapering posterior end. Labium yellow, broadest medially and reduced at both ends, 2.4 times longer (0.40 mm) than broad (0.17 mm), bears 11 brown erect spines (seven big and four small), height about two third length of maxillae. Maxillae slender, longer (0.54 mm) than broad (0.16 mm), spiked with 25–28 spines. Chelicerae porrect, as in labium and maxillae, toothless on both margins, five to eight plumose hairs in each promargin. Legs dull yellow, mottled with white flecks and gray-brown rings at bases of hairs dorsally, tibial spination formulae: on leg I three prolateroventrals, II = 2-3-0-0, III = 2-4-0-0, IV = 0-2-0-0, ventral spines in metatarsus I = five, II = six, III = four, IV = five, tarsi two-clawed, each claw with 20 teeth, leg IV with two dorsal trichobothria each in the tibiae and tarsi and three in metatarsi. Leg formula 1243.

Lengths of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.00	0.70	1.74	1.48	1.02	6.94
2	1.94	0.64	1.64	1.34	0.94	6.50
3	0.92	0.40	0.90	0.42	0.60	3.24
4	1.38	0.40	0.94	0.50	0.60	3.82

Pedipalps yellow and setaceous towards tarsi, spination formulae on tibia 2-0-1-1 and tarsus 2-0-1-3. Tibia with five trichobothria and tarsi single-clawed with 13 teeth. Abdomen long, white with greenish tinge on the more spinous and pointed posterior end. Laterally with three major basolongitudinal white bands, becoming six or seven near the spinnerets, branches occur in band 2 and 4 or 1. Venter yellow with punctated white margins. Spinnerets not visible dorsally, almost in the median half to apical one third of abdominal venter, white posterior spinnerets smaller than the yellow anterior pair. Epigynum simple, with a strongly indented posterior epigynal margin.
Male: Total length 9.00 mm. Cephalothorax 1.84 mm long, 1.33 mm wide and 1.01 mm high. Abdomen 7.16 mm long, 1.00 mm wide and 0.80 mm high. Cephalothorax yellow-brown with white mottled bands and five longitudinal rows of setae behind the PLE. Eight eyes, heterogeneous in two rows all in tubercles, ALE and PME black and AME and PLE translucent as viewed dorsally. AE shorter (0.72 mm) than PE by five times AME diameter (0.92 mm). Eye diameter (mm): ALE = 0.14, PLE = 0.12, PME = 0.06, AME = 0.04. AME–AME separation 3.8 times AME diameter. AME–ALE separation four times AME diameter. PME–PME separation 4.7 times eye diameter. PME–PLE separation 1.8 times PLE and 3.7 times PME diameter. AE straight and PE straight to slightly recurved. Clypeus height six times PME and nine times AME diameter. Sternum, chelicerae, labium, and maxillae as in female.

Leg formula 1243 (based on trend, subadult males). Spination formulae: tibiae I = 3-4-4-3, II = 2-3-3-3, III = 2-2-1-1, IV = 2-3-1-1. Pedipalps each with coiled embolus above cymbium. Each tibial palp with two apophyses – one rounded and one nearly bifurcated.

Lengths of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.32	1.00	3.04	–	–	–
2	3.08	0.92	2.80	2.28	–	–
3	1.44	0.48	1.40	0.72	0.68	4.72
4	2.00	0.52	1.48	0.80	0.76	5.56

Abdomen long and straight, anterior part slightly overhangs the cephalothorax, posteriorly setaceous and pointed. Spinnerets almost midway length of abdomen.
Variation: Females range 6.05–8.21 mm in length, carapace length = 1.48–1.61 mm, width = 1.05–1.16; abdominal length 4.44–6.66 mm and width = 0.96–1.16 mm. Spinnerets' position range from apical one third to

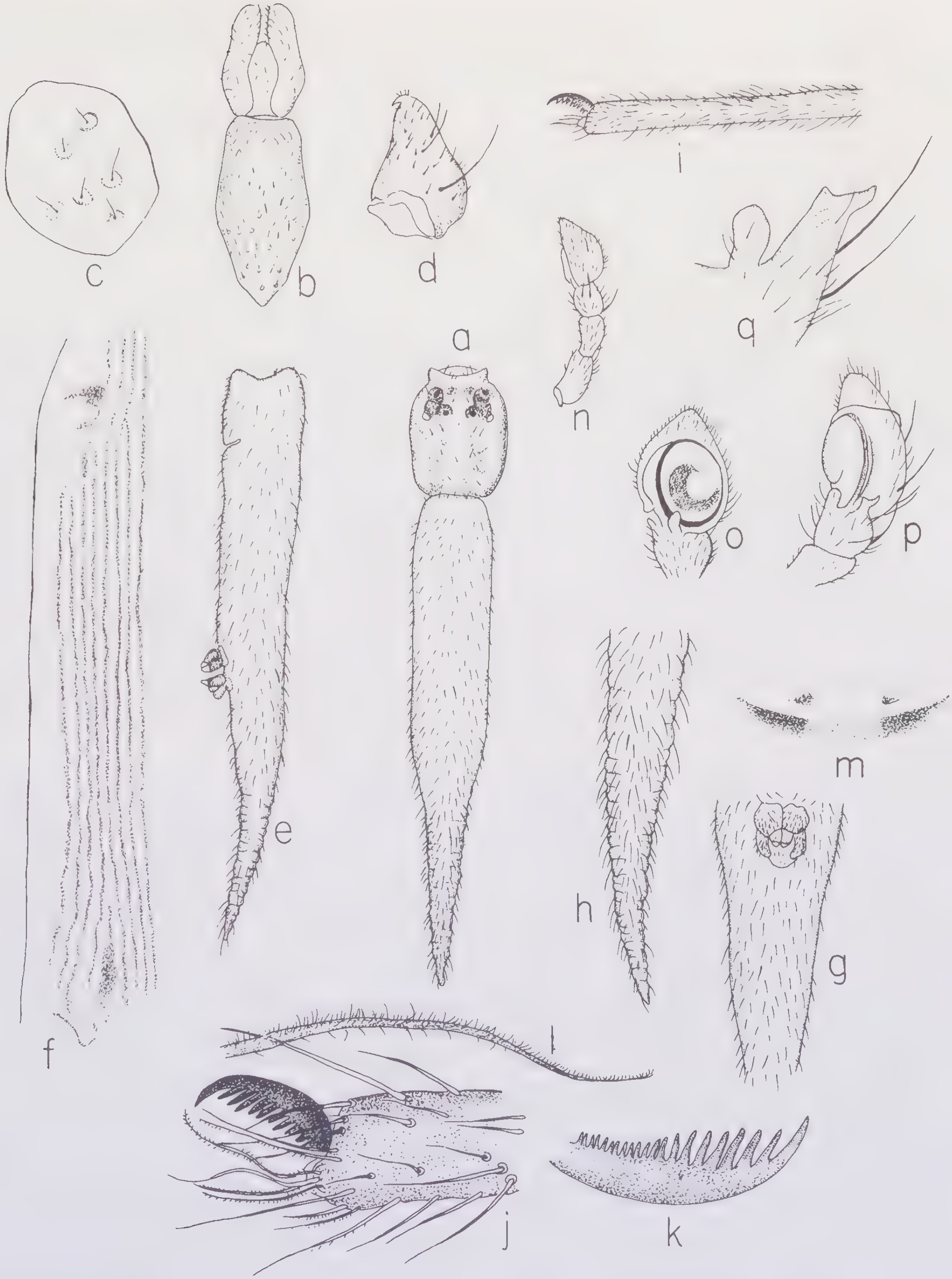

Fig. 125. Female *Monaeses habamatinikus* n. sp. (a); sternum, labium, and maxillae (b); sternal pattern (c); right chelicera (d); lateral view of abdomen (e); striae on abdominal sides (f); spinnerets (g); posterior tip of abdomen (h); tarsus I (i); tip of tarsus with claws (j); claw teeth (k); enlarged seta on tarsal tip (l); epigynum (m); and male, lateral (n), ventral (o), and retrolateral (p) views of pedipalp; and tibial apophysis (q).

midlength of abdomen.

Etymology: The species name was derived from the character of the species with long ('haba' in Tagalog) sternum and endites covered with setae ('tinik').

Natural history: *Monaeses habamatinikus* was commonly collected in August. Adults found underneath midrib of coconut leaves were green with yellow legs. Eggs were covered with a flat white cocoon, measuring 15 × 12 × 4 mm underneath the leaves. An egg mass contains 8–15 yellow spherical eggs.

Material examined: PHILIPPINES *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype female, 22 August 1984, A.T. Barrion; two female paratypes, same locality as holotype, 20 August 1981, T.J. Perfect; Laguna Prov., Los Baños, University of the Philippines, College Experiment Station, one male and two subadult males, 8 August 1979, A.T. Barrion.

Distribution: Philippines.

Monaeses aciculus (Simon)

(Fig. 126a–d)

Mecostrabus aciculus Simon, 1903. Ann. Soc. Entomol. France 71: 727.
Monaeses aciculus Ono, 1985. Bull. Natn. Sci. Mus. Tokyo (A) 11: 93.

Redescription:

Male: Total length 7.40 mm. Cephalothorax 2.20 mm long, 1.20 mm wide, 1.10 mm high. Abdomen 5.20 mm long, 0.80 mm wide., 0.78 mm high. Cephalothorax yellow with a pair of broad longitudinal bands from PME–PLE to thoracic area, almost twice longer than broad, convex, and poorly spined. Eight eyes in two rows, AE row very slightly recurved and shorter (0.70 mm) than the more recurved and longer PE row (0.75 mm), LE on larger tubercles than ME. Eye diameter (mm): ALE = 0.30, PLE = 0.12, PME = 0.08, AME = 0.05. Eye separation (mm): AME–AME = AME–ALE = 0.14, PME–PME = 0.24, PME = 0.24, PME–PLE = 0.23. Median ocular quadrangle much broader behind (0.40 mm) than in front (0.23 mm), widest width more than length (0.33 mm). Clypeus wide and rectangular with a strongly concave anterior margin covered by a thin white plate. Chelicerae yellow with gray patches, hirsute and ovoid, anteriorly truncate and tapered posteriorly between coxae IV and 2.44 times longer than broad. Labium and maxillae yellow and marked with erect spines, both slender and longer than wide. Chelicerae spinous, projected anteroventrally to slope forward. Legs yellow, long, and slender, particularly I and II. Spination: tibiae I = 2-6-3/4-3, II = 1-1-1-1; metatarsi I = 0-4-1/2-1, II = 0-3-1-0. Tarsi two-clawed with two rows of hairs underneath claw, each claw with 9–11 teeth in leg I. Leg formula 1243. Pedipalp almost as long as combined length of metatarsi and tarsi of leg II, RTA trifurcate apically, VTA rounded apically, and ITA absent. Embolus long and filiform, circling tegulum without apophysis $1\frac{1}{2}$ times.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.15	1.00	3.05	2.60	1.10	10.90
2	2.70	0.88	2.65	2.25	1.05	9.53
3	1.25	0.50	1.33	0.48	0.50	4.06
4	1.85	0.45	1.40	0.75	0.64	5.09
Pedipalp	0.50	0.28	0.23	–	0.63	1.64

Abdomen long, tapered, and curved to the right caudally, white medially with a broad grayish white band laterally, caudal one third more spinous than apical two thirds. Laterals with six white striae. Venter yellow with dotted white and yellow markings laterally. Spinnerets in caudal one third of abdomen, anterior pair yellow-brown, converging apically, with a small triangular space in inner posterior base, and more robust than the white slender anterior pair.

Natural history: The single male spider was collected from the panicle of *Echinochloa crusgali* subsp. *hispidula* in irrigated rice in November.

Material examined: PHILIPPINES: *Luzon Is.*, Mt. Prov., Banawe, 3 km SW of town proper, one male, 20 November 1980, A.T. Barrion.

Distribution: Japan, Taiwan, Vietnam, Nepal, and the Philippines (new record).

Genus *Runcinia* Simon

Runcinia Simon, 1875. Arachn. France 2: 254.
Runciniopsis Simon, 1881. Bull. Soc. Zool. France 6: 1.
Machomenus Marx, 1893. Proc. US Nat. Mus. 16: 589.

Medium-sized paleotropical thomisid with 27 described species. The genus *Runcinia* is well distinguished from the other thomisids by the flat, nearly as long as wide carapace lined with short hairs and head with short setae; small laterally projected tubercle present between LE; eyes small with ALE > PLE > AME > PME; eye separation: AME–ALE > AME–AME, PME–PME > PME–PLE; MOQ wider than long, narrower in front than behind; clypeus height smaller than AME–AME; sternum slightly longer than wide; labium longer than wide; chelicerae without teeth; leg formula 1243, leg I more than twice the length of leg IV, spines present but weak; tibiae I and II bear no lateral spines; tarsal claws with two or three teeth; pedipalp of male bears a long RTA with sclerotized tip and very small VTA; bulb simple without apophysis; tegulum rounded; embolus moderately long and filiform; epigynum in female with short intromittent canal, small central hood, and ovoid to globular spermathecae; abdomen longer than wide, truncated to tapered posteriorly beyond spinnerets.

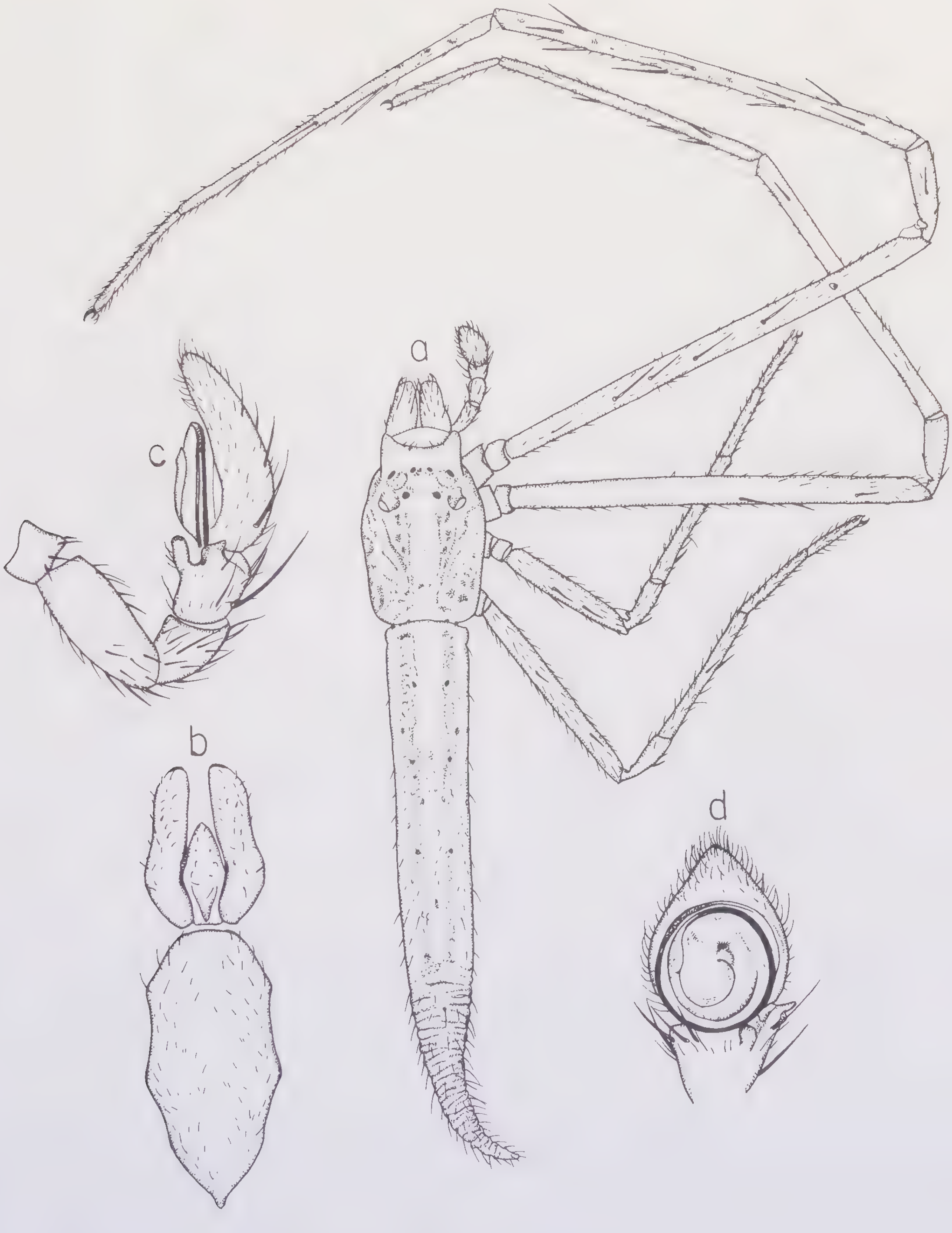

Fig. 126. Male *Monaeses aciculus* (Simon) (a); sternum, labium, and maxillae (b); retrolateral (c) and ventral (d) views of pedipalp.

Runcinia sangasanga new species
(Fig. 127a–h)

Description:
Female: Total length 8.40 mm. Cephalothorax 2.60 mm long, 2.50 mm wide, 2.25 mm high. Abdomen 5.80 mm long, 3.80 mm wide, 3.50 mm high. Cephalothorax slightly longer than wide, lined with hairs and spines, light brown with an inverted U-shaped dark reddish brown band and a white longitudinal H-band or I-band inside the U-band dorsally. Eight eyes in two rows, all clear except blackish PME, AE row straight in front of

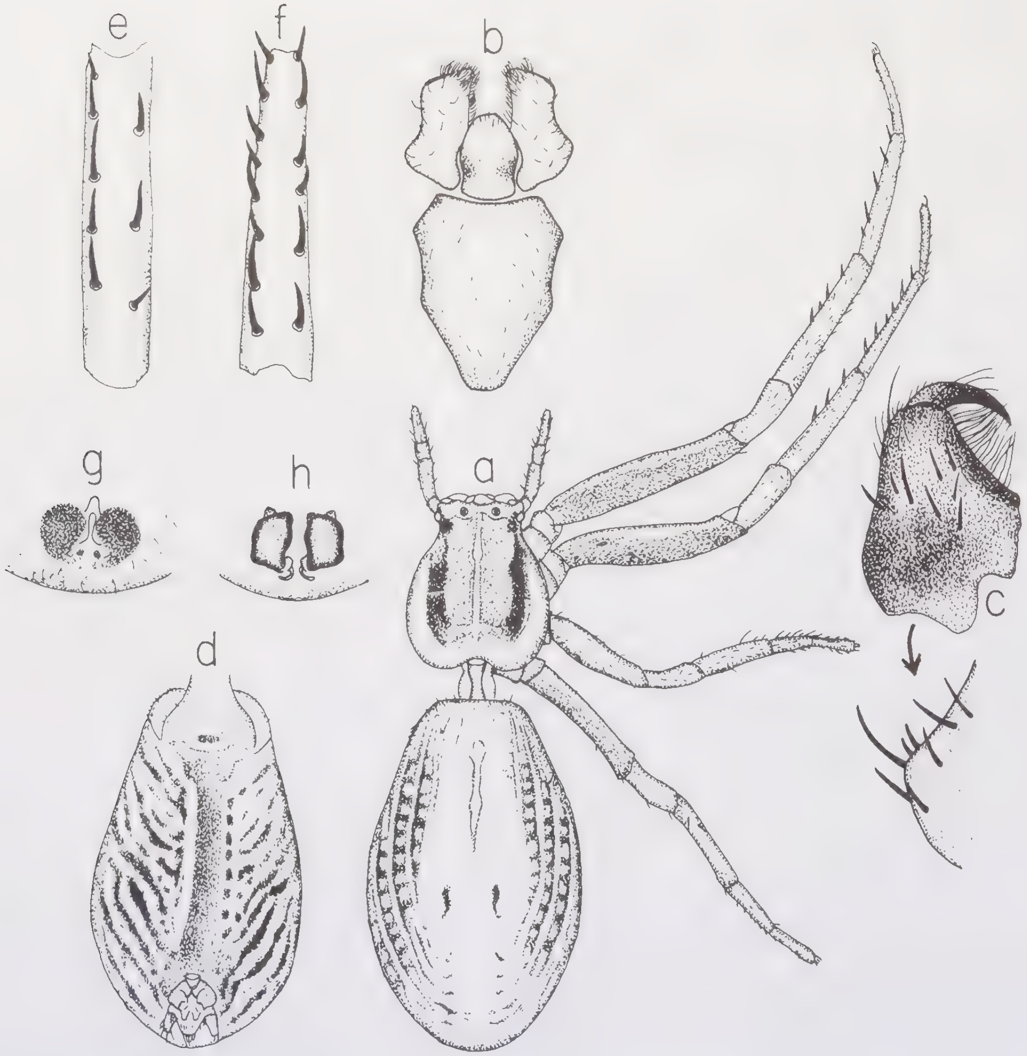

Fig. 127. Female *Runcinia sangasanga* n. sp. (a); sternum, labium, and maxillae (b); chelicera with close-up of setal pattern (c); abdominal venter (d); venter of tibia I (e) and metatarsus I (f); and dorsal (g) and ventral (h) views of epigynum.

the transverse white band of the longer and recurved PE row, lateral eyes almost in the lateral tubercle, with ALE in front and PLE behind. Eye diameter (mm): ALE = 0.13, AME = PLE = 0.10, PME = 0.08. Eye separation: AME–AME 2.3 times eye diameter, ALE–AME = AME–AME, PME–PME six times PME or 4.6 times AME diameter, PME–PLE four times AME diameter. Median ocular quadrangle wider behind (0.63 mm) than in front (0.40 mm), anterior width equals length (0.40-mm). Clypeus height 1.7 times AME diameter. Sternum yellow-brown, longer (1.25 mm) than wide (1.00 mm), distal end slightly concave, lateral margins opposite coxae straight, posterior tip bluntly rounded between coxae IV. Labium same color as sternum and maxillae, as long as wide with distal end rounded. Maxillae longer than wide, slightly concave along base of pedipalp, distal end with dark margin and pale yellow scopulae on top of it. Chelicerae yellow with two black spots, very small but stout at its midhalf, with six or more spines, fang short and small, with scopulae in the prolaterals. Legs I and II longer and more robust than III and IV, yellow-brown with longitudinal white stripes and a ventral black spot at subapex of femora I, II, and III. Tibiae I with eight ventral spines (five + three) on left leg and eight (four pairs) on the right, II with six (three pairs); metatarsi I with 14 (eight + six) ventral spines on left leg and 15 (eight + seven) on the right. Tarsi two-clawed, each claw with three or four small teeth. Leg formula 1243. Pedipalp yellow with a small tarsal claw, and as long as metatarsus I.

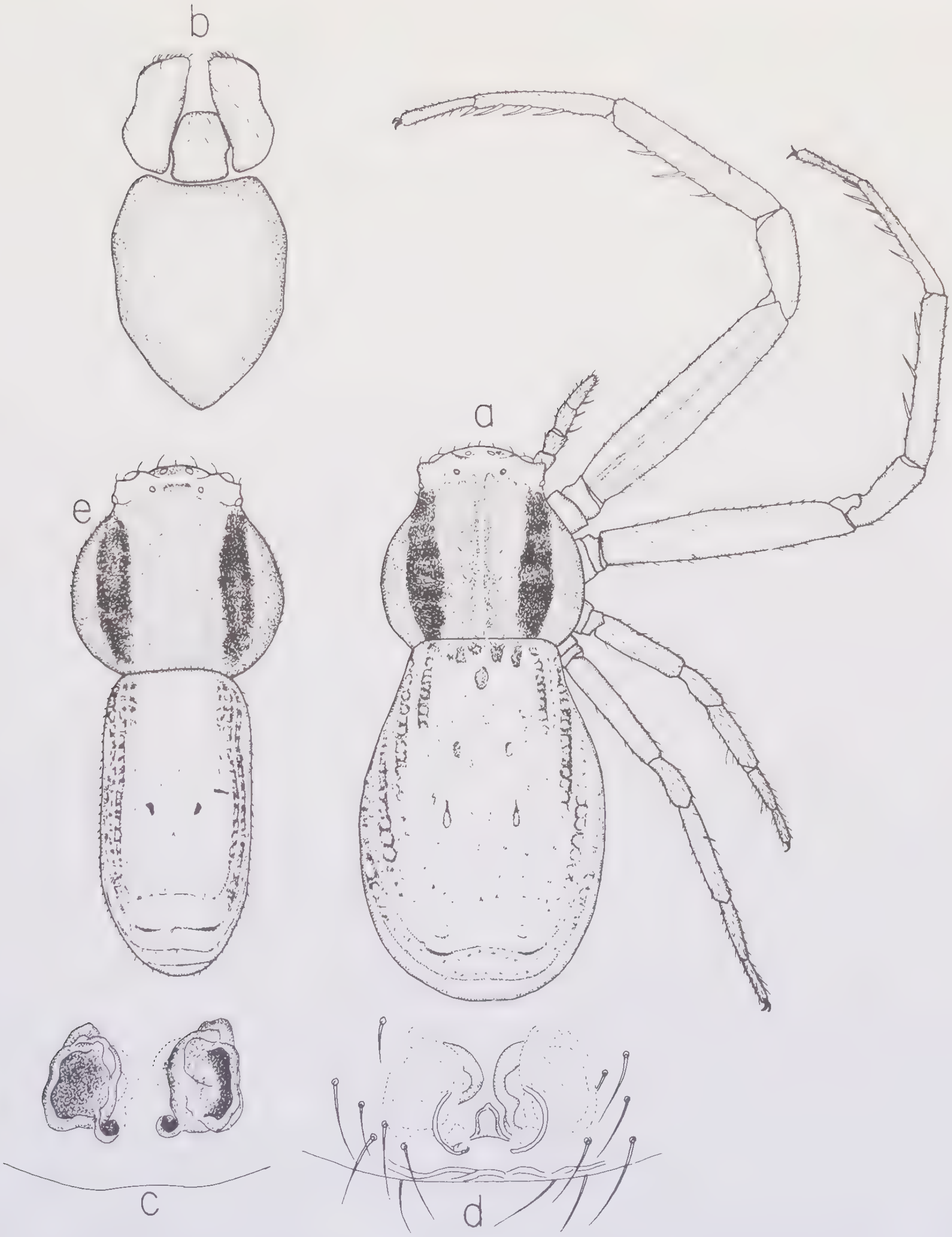

Fig. 128. Female *Runcinia albostriata* Boesenberg and Strand (a); sternum, labium, and maxillae (b); ventral (c) and dorsal (d) views of epigynum; and form I of male (e).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	1.50	2.50	2.10	0.95	10.05
2	2.65	1.40	2.20	1.85	0.85	8.95
3	1.40	0.75	1.20	0.65	0.70	4.70
4	1.70	0.80	1.40	0.90	0.75	5.55
Pedipalp	0.65	0.45	0.40	-	0.60	2.10

Abdomen white with four U-shaped brown bands on the lateral margins, alternating with white narrow stripes, brown bands with yellow-brown shallow pits, longer than wide, roundish on the posterior tip, and widest a little below midhalf. Laterals with six dichotomously branching white bands, all originating from the laterodistal portion of abdomen, and extended ventrally except in the midventral abdomen. Spinnerets not visible dorsally, posterior pair about half the diameter of anterior pair and widely separated, unlike the anterior one. Epigynum with a small black dome-like band anterior to the slightly traceable spermathecae. Spermathecae subrectangular with a small visible bursa copulatrix.

Etymology: Derived from the dichotomously branched white bands of the abdomen, 'sangasanga' in Tagalog.

Natural history: The holotype female was collected from a Malaise trap installed in an *Imperata cylindrica*-dominated grassland hill in September.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria-Mat-i Vill., holotype female, 23 September 1987, A.T. Barrion.

Distribution: Philippines.

Runcinia albostriata Boesenberg and Strand

(Figs 128a–e, 129a–e)

Runcinia albostriata Boesenberg and Strand, 1906. Abh. Senckenb. Naturf. Ges. 30: 252.

Redescription:

Female: Total length 4.90 mm. Cephalothorax 2.10 mm long, 1.80 mm wide, 1.10 mm high. Abdomen 2.80 mm long, 2.00 mm wide, 1.00 mm high. Cephalothorax longer than wide, yellow-brown with a pair of broad longitudinal bands sublaterally and a white median T-band from eye to foveal area. Eyes in two recurved rows, AE row shorter (0.95 mm) than PE row (1.20 mm). Eye diameter (mm): ALE = 0.14, PLE = 0.10, AME = 0.08, PME = 0.06. Eye separation: AME–AME twice eye diameter, AME–ALE 2.4 times diameter of AME, ALE–PLE 2.25 times AME diameter, PME–PME 4.4 times diameter of AME, PME–PLE three times PLE diameter. Similar to *R. acuminata*, a tubercle exists between ALE and PLE. Median ocular quadrangle 1.48 times wider than in front (0.33 mm), length shorter than anterior width. Clypeus wide, 1.6 times AME diameter, with seven strong and five or six small spines along anterior margin. Sternum yellow, longer than wide, apical margin concave at base of labium, posterior end moderately tapered between coxae IV. Labium similar in color to maxillae and sternum, as long as broad and rounded apically. Maxillae truncate at apex and outer lateral margin almost straight. Chelicerae vertical with a small fang and spines frontally. Legs yellow, long and slender, particularly I and II, tibia I with ten (2-1-2-1-1-3) ventral spines and II with six (1-2-2-1) ventral spines. Metatarsi I and II with 14 (2-1-2-1-2-2-2-2) and 13 (2-1-2-2-1-1-2-2) ventral spines, respectively. Tarsi two-clawed, each claw with four or five teeth in leg I. Leg formula 1243. Pedipalp a little shorter than metatarsus I.

Abdomen whitish yellow with a pair of sigilla at midhalf, laterals with alternating eight gray and seven yellow stripes, anterior end truncate, and caudal end rounded. Venter yellow with ventrolaterals white. Spinnerets visible dorsally, anterior spinnerets yellow with apices wide apart and bases close to each other. Posterior spinnerets slender and vertically parallel to each other. Epigynum small with a wider than long central hood in the middle, intromittent orifices located in the middle, intromittent canal winding to C-shaped, spermathecal gland converging and located in the outer anterior portion of subglobular to elongate spermatheca. Anterior part of epigynum with transverse wavy striae, becoming circular around each seta.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.10	2.00	1.60	0.85	8.05
2	2.20	1.00	1.80	1.50	0.80	7.30
3	1.10	0.50	0.90	0.50	0.45	3.45
4	1.50	0.55	1.00	0.65	0.55	4.25
Pedipalp	0.45	0.33	0.30	–	0.45	1.53

Male: Total 4.00 mm long. Cephalothorax 1.60 mm long, 1.50 mm wide, 0.90 mm high. Abdomen 2.40 mm long, 1.10 mm wide, 0.90 mm high. Cephalothorax with two broad longitudinal brown bands, sometimes completely absent, and lateral margins bear short hairs. Eight eyes in two rows with a white transverse band between AE and PE rows. Eye diameter (mm): ALE = 0.10, PLE = 0.08, AME = 0.07, PME = 0.05. Separation (mm): PME–PME = 0.30, PME–PLE = 0.23; AME–ALE = 0.15; AME–AME = 0.13. MOQ wider in front than behind (0.26 : 0.41 mm). Clypeus height large, twice AME diameter. Legs long and slender, particularly I and II, yellow except brown apical one half of tibiae I and entire metatarsi I. Spination: tibiae I and II each with six (2-2-2) ventral spines, III with two (0-2-0), and IV with five (0-1-2-0-2); metatarsi I and II each with eight (2-2-2-2) ventral spines. Leg formula 1243. Pedipalp with a pointed sclerotized RTA directed anteriorly and a small inwardly curved yellow VTA, a long hair present at subbase of RTA projecting to ejaculatory duct and tegulum, dorsum of tibia with a spine and three or four trichobothria anterior to it.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	0.90	2.50	2.25	1.10	9.75
2	2.45	0.75	2.15	1.80	0.90	8.05
3	1.00	0.40	0.90	0.50	0.45	3.25
4	1.15	0.45	1.00	0.50	0.40	3.50
Pedipalp	0.40	0.20	0.18	–	0.30	1.08

Abdomen yellow with four small black spots, longer than wide, moderately tapered anteriorly (some of the males show rounded posterior ends). Spinnerets similar to the male.

Natural history: Specimens were collected from rice, bush sitao, cotton, and ratoon rice from August to February or April.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, one young male, 20 January 1978, A.T. Barrion; Batañgas Prov., Tanauan, Cale Vill., one young male, January 1976, R.F. Apostol;

Pangasinan Prov., Manaoag, Pao Vill., one male and one female, 7 February 1977, J.P. Bandong; *Mindoro Is.*, Mindoro Oriental, San Jose, one female, O. Mochida; *Panay Is.*, Iloilo Prov., Oton, Sta. Rita Vill., one male and one female, 17 January 1978, A.T. Barrion. **MYANMAR:** Rangoon, one young female, November 1989, Biocontrol Team. **INDONESIA:** Central Java, Yogyakarta, Magelang, Blabak, one male, 24 August 1989, A.T. Barrion. **CHINA:** Canton, one female, 12 April 1980, V.A. Dyck.

Distribution: Japan, Korea, China, Taiwan, Thailand, the Philippines (new record), Indonesia (new record), and Myanmar (new record).

Remarks: The form I male (Fig. 128e) has no mark or band on apex of tibia and metatarsus in leg I, and no white T-band in the carapace, with a pair of median sigilla in the elongate body, and rounded posterior end of abdomen. Form II male has reddish brown band on apices of tibiae I and II and entire metatarsus I, bears four sigilla, and has pointed posterior end of abdomen. Tibial and metatarsal ventral spines are also different in the two forms.

Runcinia acuminata (Thorell)

(Fig. 130a–h)

Misumena elongata L. Koch, 1874. Arachn. Austral.: 529 (preoccupied by *Runcinia elongata* Stolicza, 1869) (= *Thomisus (Xysticus) elongatus* Stolicza, 1869)

Runcinia elongata L. Koch, 1876. Arachn. Austral.: 803.

Pistius (Runcinia) acuminatus Thorell, 1881. Ann. Mus. Civ. Stor. Nat. Genova 17: 333 (Nom. nov. pro *Pistius (Runcinia) elongatus* L. Koch, 1874).

Runcinia acuminata Roewer, 1954. Kat Aran. Bruxelles 2(a): 855.

Runcinia albostriata Hu, 1984. Chinese Spiders Fields Forests: 334 (misidentification).

Redescription:

Male: Total length 4.10 mm. Cephalothorax 1.80 mm long, 1.80 mm wide, 0.80 mm high. Abdomen 3.30 mm long, 1.35 mm wide, 0.70 mm high. Cephalothorax as long as wide, yellow-brown with two brown longitudinal bands and a white transverse band in the ocular area. Eight eyes in two recurved rows, AE shorter (0.90 mm) than PE row (1.08 mm) and with a tubercle between ALE and PLE. Eye diameter (mm): ALE = 0.13, PLE = 0.08, AME = 0.06, PME = 0.04. Eye separation: AME–AME 2.5 times eye diameter, AME–ALE 3.8 times AME diameter, ALE–PLE = AME–AME, PME–PME 6.3 times AME diameter, PME–PLE five times AME diameter. MOQ narrower in front (0.29 mm) than behind (0.46 mm), anterior width a little longer than length (0.28 mm). Clypeus height large, with alternating long (five) and short (four) setae, 2.2 times diameter of AME. Sternum yellow brown and hairy, apical margin concave, lateral margins moderately sclerotized, and posterior end bluntly rounded between coxae IV. Labium yellowish brown, similar to maxillae, as wide as long with a rounded anterior end. Maxillae longer than wide, apico-inner ends towards each other, and middle half of outer lateral margin slightly concave. Chelicerae yellowish brown, vertical, with few setae frontally, promargin and retromargin without teeth, but with hairs. Legs long and slender, particularly I and II, yellow to yellowish brown except brown apical one third of tibiae I and II, gray spots in the venter of femora I and II, and a small gray band above midlength of tibiae I and II. Femora I with four prolateral and four dorsal spines, II with five dorsal and no prolateral spines. Spination in tibiae I = 1-7-3-3 and II = 1-5-3-3; metatarsi I = 1-13(2-1-1-1-2-1-1-2-2-)-2-2 and II = 1-10(2-1-2-1-2-2)-2-2. Tarsi two-clawed, each claw with five or six teeth in leg I. Leg formula 1243. Pedipalp yellow-brown, almost as long as combined length of tibia IV and metatarsus IV, tibia with one strong and one short dorsal setae and five or six trichobothria. Prolaterals with four setae. RTA well developed, about as long as diameter of tibia, broad basally and shortly tapered apically. VTA small and apex obliquely truncate. ITA absent. Cymbium rounded apically with a group of porrect hairs. Bulb single. Radix of embolic division in the proximal one half of tegulum. Embolus filiform, apical part visible from ventral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Tibia	Patella	Metatarsus	Tarsus	Total
1	3.60	1.15	2.90	2.85	1.30	11.80
2	3.30	1.00	2.60	2.60	1.15	10.65
3	1.25	0.55	1.00	0.55	0.50	3.85
4	1.40	0.45	1.10	0.50	0.60	4.05
Pedipalp	0.50	0.30	0.40	–	0.45	1.65

Abdomen yellow-brown, setaceous, and elongated, with a truncated anterior margin and a tapered posterior end, 2.5 times longer than broad, bears three light brown, elongated brown spots in triangular formation in the apical one third and a pair of slightly oblique black spot at midlength, posterior one third with four transverse lines, and base of anal tubercle with a black transverse band. Venter yellow-brown with eight pairs of pale brown spots in two longitudinal rows between epigastric furrow and spinnerets, ventrolateral edges in the basal one fourth anterior to spinnerets, each with two or three circular yellow spots. Laterals with five or six longitudinal striae. Spinnerets yellow-brown, not visible dorsally, anterior pair very close to each other with converging apices, posterior pair much smaller than the anterior pair and more wide apart. Colulus triangular, located much anterior to the anterior pair.

Female: Total length 8.80 mm. Cephalothorax 2.80 mm long, 2.50 mm wide, 1.80 mm high. Abdomen 6.00 mm long, 2.65 wide, 1.70 mm high. Cephalothorax with a white T-shaped band from eye area to thorax, foot of T-band dark brown-red in foveal area, sublaterals with a broad dark reddish brown longitudinal band, thoracic area white around fovea, cephalic and thoracic areas

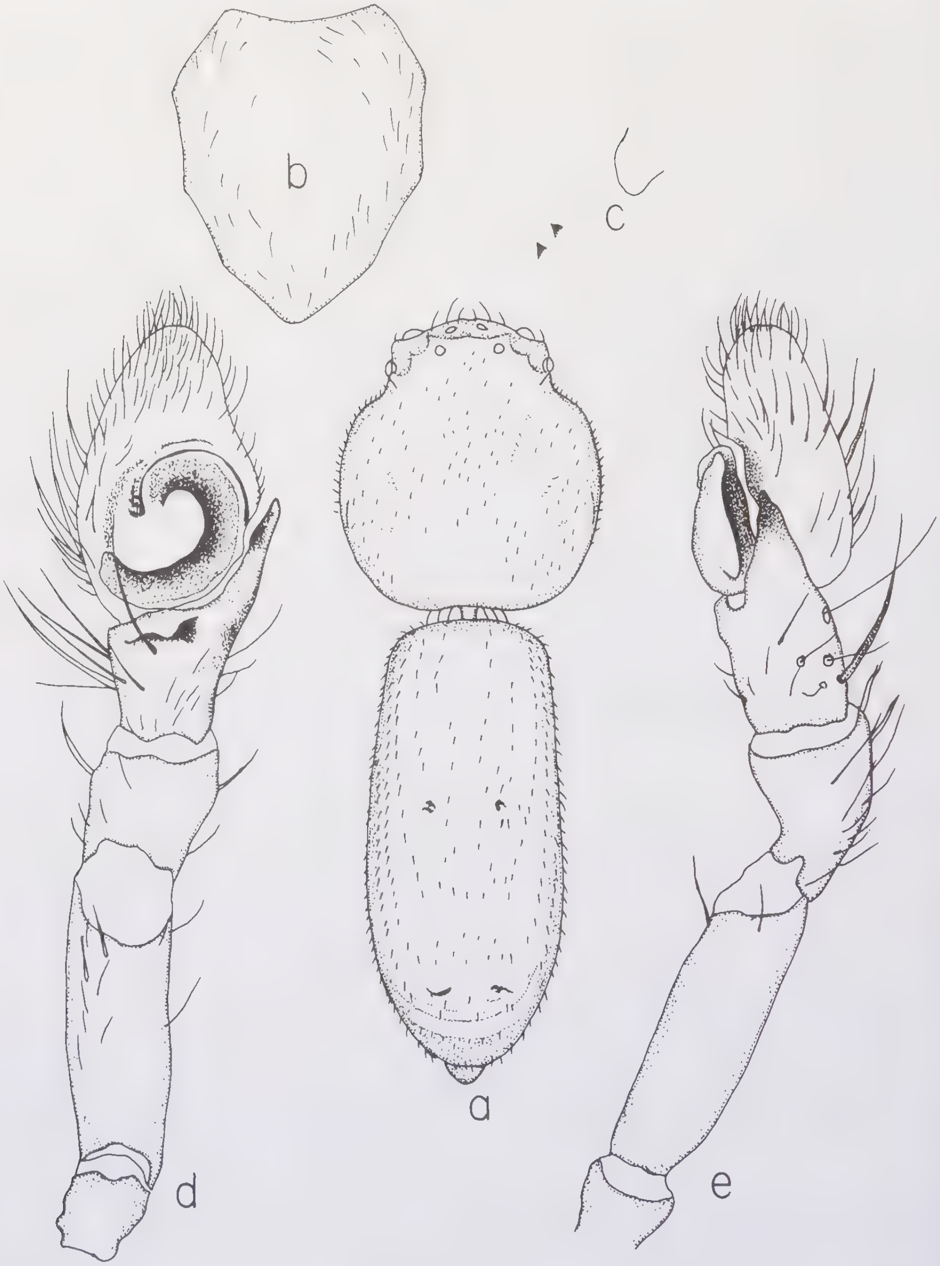

Fig. 129. Male *Runcinia albostriata* Boesenberg and Strand, form II (a); sternum (b); cheliceral teeth (c); and ventral (d) and retrolateral (e) views of pedipalp.

bear small setae. Eyes similar to male except measurement. Eye diameter (mm): ALE = 0.13, AME = PLE = 0.09, PME = 0.05. Eye separation: AME–AME 2.2 times eye diameter, AME–ALE 3.7 times AME diameter, ALE–PLE and PLE–PME 3.1 and 4.9 times AME diameter, respectively, PME–PME 6.4 times diameter of AME. Median ocular quadrangle 1.75 times wider behind (0.70 mm) than in front (0.40 mm), length barely 0.47 times posterior width. Clypeus high, 5.6 times AME diameter, bears six spines. Sternum whitish yellow, clothed with setae, and (midapical area) posterior to labium, with a yellow patch. Labium and maxillae similar to male. Chelicerae ventrical, bearing no teeth, with a small yellow fang, and frontal side armed with short spines. Legs long and slender, particularly I and II, yellowish brown except venter of femora I and II with numerous black spots. Tibiae I and II with 11 (2-2-1-2-2-1-1) and ten (2-2-1-2-2-1) ventral spines, respectively. Metatarsi I with 17 (11 robust and six small) ventral spines and II with only 14 (13 robust and one small) ventral spines. Patellae I and II with a black spot basoventrally. Penultimate apicoventral spine of tibiae I and II with a black spot basally. Tarsi two-clawed, each claw with four or five teeth in leg I. Leg formula 1243. Pedipalp yellowish brown with a single small claw, total length shorter than metatarsi II.

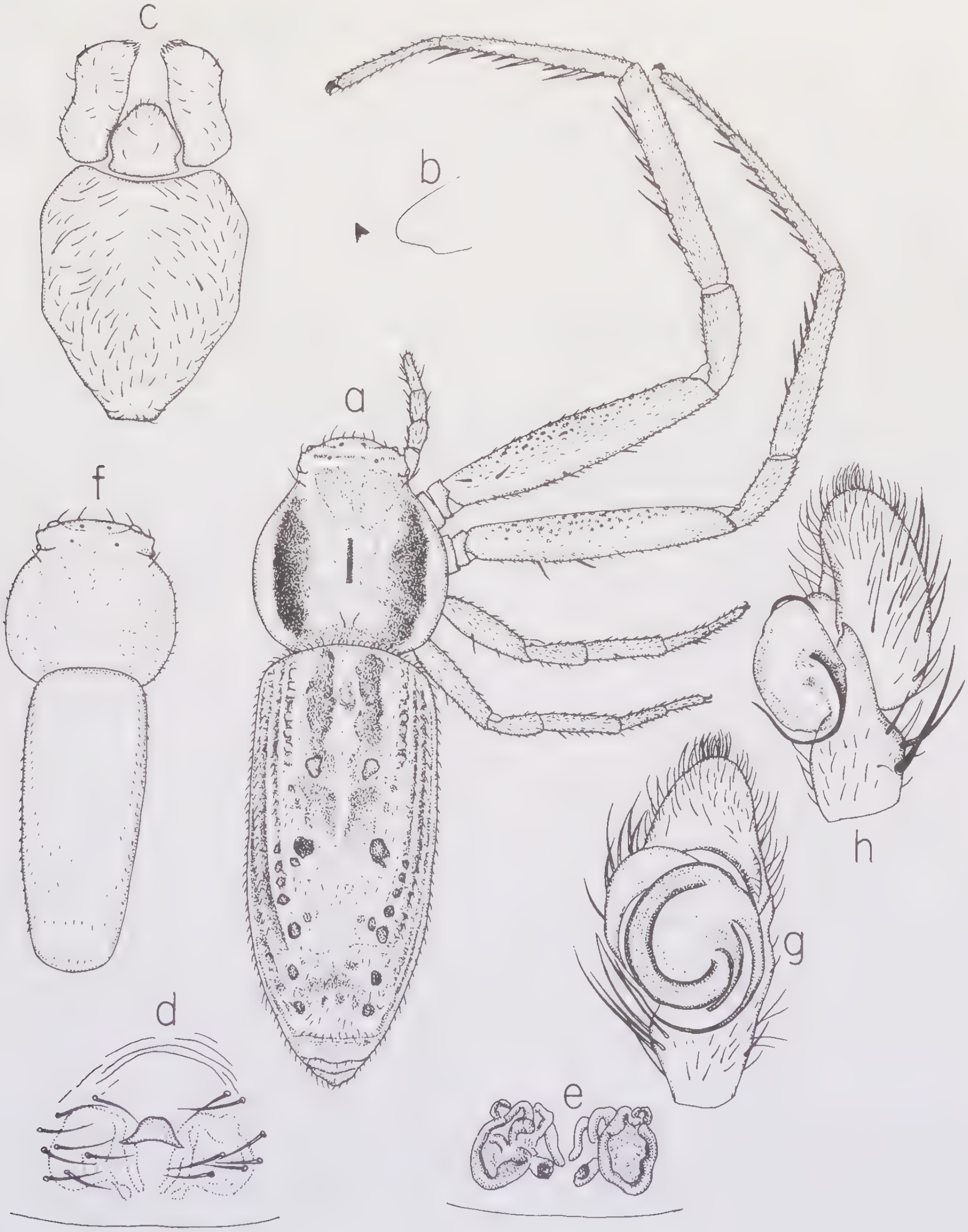

Fig. 130. Female *Runcinia acuminata* (Thorell) (a); cheliceral teeth (b); sternum, labium, and maxillae (c); dorsal (d) and ventral (e) views of epigynum; and male's body without legs (f); and pedipalp viewed ventrally (g) and retrolaterally (h).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.60	1.50	2.95	2.50	1.15	11.70
2	3.45	1.35	2.65	2.20	1.10	10.75
3	1.60	0.70	1.10	0.65	0.70	4.75
4	1.80	0.65	1.25	0.90	0.75	5.35
Pedipalp	0.70	0.45	0.40	–	0.60	2.15

Abdomen clothed with short spines, dirty white, mottled, with pale yellow bands and subspherical spots, apical one half bears five median spots (apical three, pale yellow, form a triangle, basal two spots black), anterior margins truncate and posterior end moderately tapered. Posterior one half tapers to a point, with at least three or four transverse rows of setae anterior to anal tubercle, with a black band. Laterals bear five or more gray furrows forming as many spinous ridges. Venter yellow-brown with at least eight pairs of tiny brown dots in two longitudinal rows between epigastric furrow and spinnerets. Colulus and arrangement of spinnerets similar to male.

Natural history: Adults and spiderlings abound from June to November.

Material examined: PHILIPPINES: *Luzon Is.*, Batañgas Prov., Lipa City, Marauoy Vill., three immatures, 15 October 1982, A.T. Barrion; Tanauan, Cale, two females, 15 July 1991, A.T. Barrion; Laguna Prov., Los Baños, IRRI Farm, two spiderlings, 30 June 1977, A.T. Barrion; *Panay Is.*, Iloilo Prov., Oton Vill., two immatures, 12 November 1978, M. Lumaban; *Cebu Is.*, Cebu Prov., Bogo Vill., two immatures, 23 June 1985, A.T. Barrion; *Mindanao Is.*, Zamboanga del Sur, Margosatubig, one spiderling, 10 August 1979, A.T. Barrion; Pagadian, one young male, 12 August 1979, A.T. Barrion; Agusan del Sur Prov., Del Monte, two females, 2 August 1979, A.T. Barrion. **INDONESIA:** Yogyakarta, Klaten, one female and one male, 22 August 1989, A.T. Barrion.

Distribution: Japan, Thailand, New Guinea, Australia, the Philippines (new record) and Indonesia (new record).

Genus *Thomisus* Walckenaer

Thomisus Walckenaer, 1805. Tabl. Araneides: 28.
Thomisa Simon, 1864. Hist. Nat. Araign. (Araneides): 431, 525.
Chorizopsis Simon, 1864. Hist. Nat. Araign. (Araneides): 428 (subgenus within the genus *Xystica*).
Phloeoides Simon, 1864. Hist. Nat. Araign. (Araneides): 432 (subgenus within the genus *Thomisa*).
Daradius Thorell, 1870. Nova Acta Reg. Soc. Sci. Upsal. 3(7): 170.

Thomisus Walckenaer is a paleotropical genus of medium- to large-sized thomisids comprising approximately 80 nominal species. Members of the genus are sexually dimorphic, with male darker than the female; cephalothorax almost as long as wide without setae; head with laterally projected large horn-like protuberances between LE; eyes small, subequal in size, and poorly developed, ALE still the largest; eye separation: AME–ALE > AME–AME, PME–PME > PME–PLE; MOQ wider than long; wider behind than in front; clypeus almost as wide as AME–AME; labium longer than wide; sternum as long as or longer than wide; chelicerae without teeth; leg formula 1243 or 2143; leg spines not strongly developed and tibiae I and II without lateral spines; tibiae and metatarsi I and II bear ventral spines; pedipalp of male with RTA, ITA, and VTA, RTA long and developed but VTA poorly developed, ITA strongly sclerotized; simple bulb without apophysis; short embolus, filiform or spiniform; female epigynum simple, less developed, without hood, and bears short intromittent canal, and globular spermathecae with a gland; abdomen wider than long, very pronounced in female and more sclerotized in male.

Thomisus italongus new species

(Fig. 131a–h)

Description:

Male: Total length 2.85 mm. Cephalothorax 1.35 mm long, 1.35 mm wide, 0.65 mm high. Abdomen 1.50 mm long, 1.53 mm wide, 0.63 mm high. Cephalothorax brown, roughened by minute tooth-like tubercles, except posterior area of PME, and lateral margins serrated. Eye tubercles without white spots. Eight eyes in two rows, both moderately recurved, AE row shorter (0.81 mm) than PE row (1.10 mm). Eye diameter (mm): ALE = 0.08, AME = 0.06, PME = PLE = 0.05. Eye separation: AME–AME 3.3 times eye diameter, AME–ALE four times diameter of AME, PME–PME and PME–PLE five and 4.7 times AME, respectively. MOQ much broader behind (0.50 mm) than in front (0.31 mm), length (0.30 mm) slight shorter than anterior width. Clypeus brown, broad, and 2.3 times diameter of AME. Sternum yellow-brown and smooth, posterior end truncate between coxae IV. Labium and maxillae typical of the genus. Chelicerae brown without a dorsal process towards base. Legs brown and moderately short. Spination in femora I = 1-0-4-0, II = 1-0-0-0; tibiae I to IV each with two dorsal spines, tibiae I and II each with one ventral spine; metatarsi I with two ventral spines. TmI = 0.95. Tarsi two-clawed, each superior claw with one to three teeth in leg I. Leg formula 2134. Pedipalp shorter than combined length of femur and patella of leg I, RTA, VTA, and ITA present. RTA developed, triangular-like, projecting lateral apex highly sclerotized and black, with a thin long hair at tip and a trichobothrium on its opposite end near the cymbium. VTA short, lightly sclerotized and blunt apically. ITA sickled-shaped, strongly developed with blunt apex, reaching almost entire length of cymbium, and posterior extension pointed, projected posteriorly and curved, similar to RTA, space between tips of RTA and posterior process of ITA almost as long as patella. Embolus long and filiform, circling cymbium once. Tegular apophysis not developed. Cymbium longer than wide, subspherical in ventral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.98	0.41	0.73	0.59	0.52	3.23
2	1.00	0.51	0.76	0.63	0.50	3.40
3	0.65	0.35	0.48	0.35	0.31	2.14
4	0.60	0.30	0.38	0.39	0.34	2.01
Pedipalp	0.30	0.25	0.15	–	0.53	1.23

Abdomen brown, with three pale brown spots in the middle, apically subtruncate and gradually narrowed to a strongly rounded posterior end, lateral margins with spines, lateroventral with five light brown striae. Book lungs dark reddish brown. Spinnerets in a U-shaped

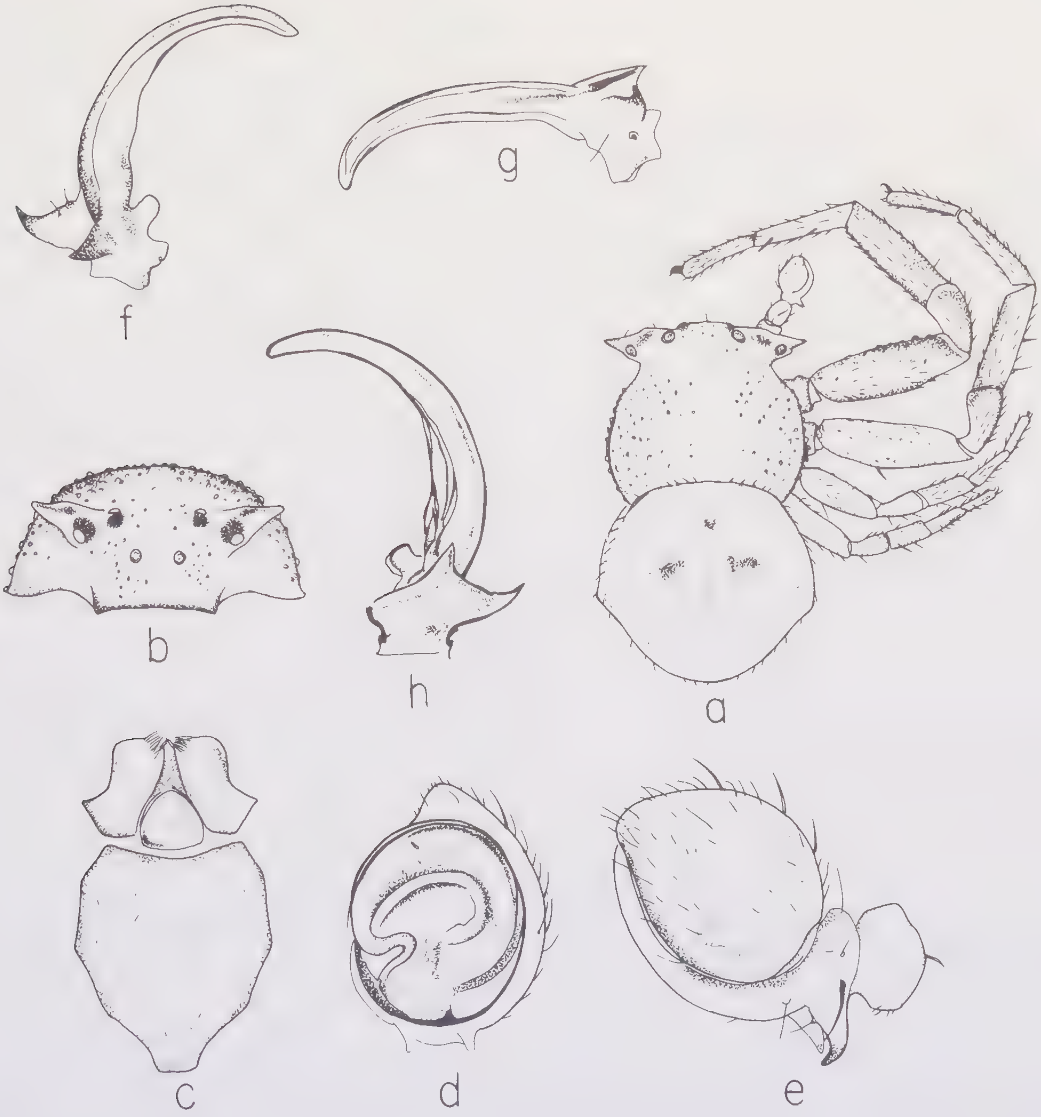

Fig. 131. Male *Thomisus italongus* n. sp. (a); frontal view of head (b); sternum, labium, and maxillae (c); ventral view of cymbium (d); lateral view of pedipalp (e); and tibial apophysis (f–h).

cavity, anterior spinnerets more robust than the posterior pair and apically converging.
Etymology: Named after the long ITA.
Natural history: Two males were collected from Malaise trap nets set in the middle of unweeded rice in July.
Material examined: PHILIPPINES: *Leyte Is.*, Leyte Prov., Baybay, holotype male, 16 July 1985, A.T. Barrion; Palo, paratype male, 15 July 1985, A.T. Barrion.
Distribution: Philippines.

Thomisus okinawensis Strand
(Figs 132a–h, 133a–c)

Thomisus okinawensis Strand, 1907. Abh. Naturf. Ges. Gorlitz 25: 202.
T. formosae Strand, 1907. Abh. Naturf. Ges. Gorlitz 25: 204.
T. picaceus Simon 1908. Bull. Sci. France Belg. 42: 135.
T. formosanus Bonnet, 1957. Bibliogr. Aran. 2: 4580.
T. okinawensis Yaginuma, 1977. Acta Arachnol. 27: 397.

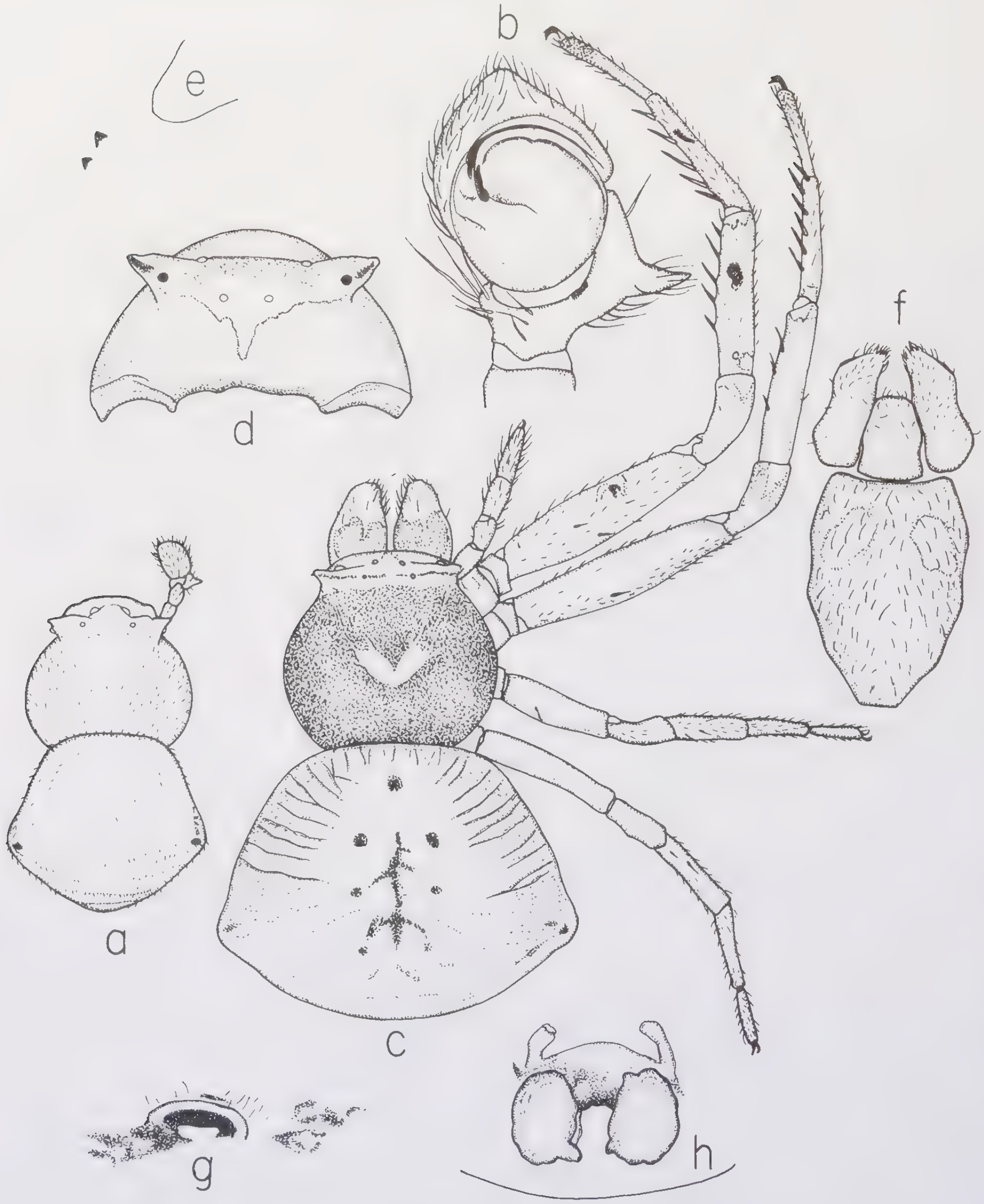

Fig. 132. Male *Thomisus okinawensis* Strand (a); and ventral pedipalp (b); and female's dorsal view (c); frontal view of head (d); cheliceral teeth (e); sternum and maxillae (f); and dorsal (g) and ventral (h) views of epigynum.

Redescription:

Male: Total length 3.31 mm. Cephalothorax 1.53 mm long, 1.63 mm wide, 0.65 mm high. Abdomen 1.78 mm long, 1.70 mm wide, 0.50 mm high. Cephalothorax yellowish brown except white transverse ocular ridge forming distinct lateral tubercles, lined with short brown hairs and may be darker in submarginal area. Eight eyes in two rows, shorter AE row (0.99 mm) more recurved than PE row (1.25 mm) and lateral eyes in the tubercle. Eye diameter (mm): AME = 0.10, ALE = 0.08, PLE = 0.06, PME = 0.05. Eye separation: AME–AME 7.8 times eye diameter, AME–ALE 2.8 times AME diameter, PME–PME 4.6 times AME diameter, PME–PLE 3.3 times AME diameter, ALE–PLE 1.9 times AME diameter. Median ocular quadrangle much broader behind (0.56 mm) than in front (0.36 mm), length equal to one half of posterior width. Clypeus broad, 2.3 times diameter of AME. Sternum longer (0.75 mm) than wide (0.63 mm), anterior margin concave, lateral margins without concavities opposite each coxa, and posterior end rounded between coxae IV. Labium and maxillae typical of the genus, both yellowish brown. Chelicerae yellowish brown each with a broadly rounded anterior process frontally in the basal one third. Legs light brown to yellowish brown with dark brown bands in the subapex of femora I and II, almost entire patellae I and II, posterior end and apical one half of femora I and II, apical two thirds of metatarsi I and II, apical one half of

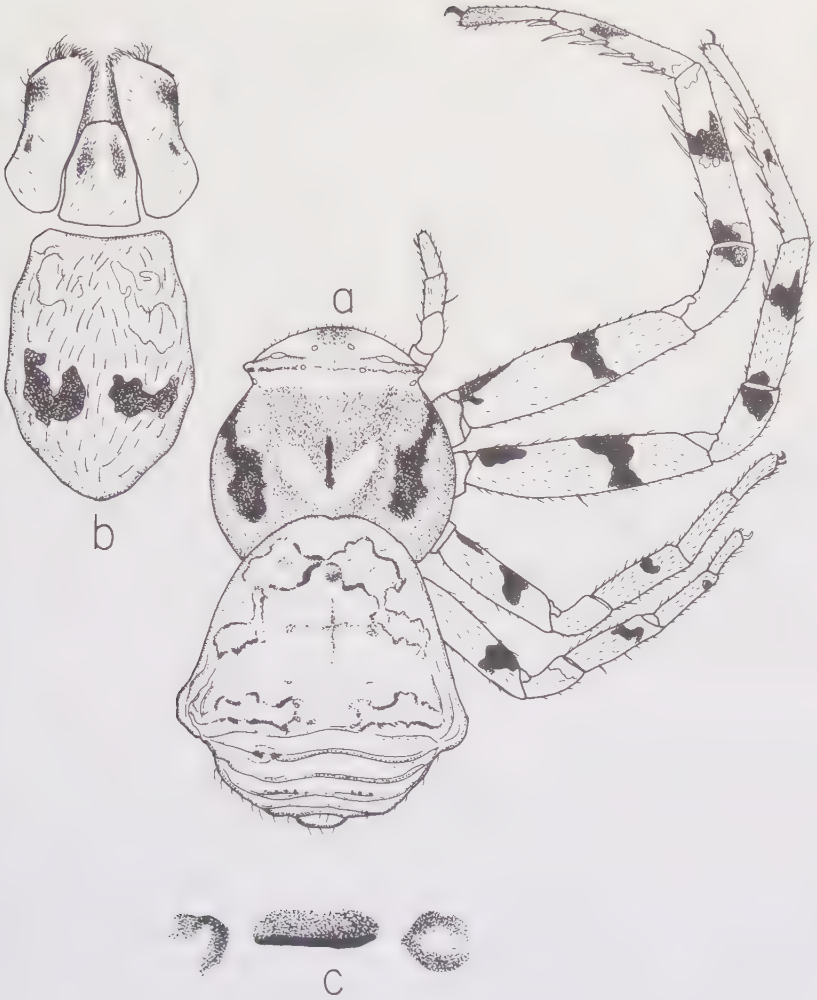

Fig. 133. Female *Thomisus okinawensis* Strand, form I (a); sternum, labium, and maxillae (b); and epigynum (c).

tarsi I and II and tibiae III and IV. Spination in femora I = 1-0-3/4-0, II = 1-0-0-0, III = 1-0-0-0; tibiae I = 0/2-1/3-0-0, II = 1-2-0-0, III = IV = 2-0-0-0; metatarsi I = 0-4(1-1-2/2-2)-1-1, II = 0-4(2-2)-1-1. Tarsi two-clawed, each superior with at least five teeth in leg I and two big teeth in each claw of tarsi IV. Leg formula 2143. Pedipalp longer than femur I but shorter than femur II, tibia with wide ITA projected laterally and almost at right angles to unsclerotized RTA, VTA wide and low, concave area between ITA and RTA with a seta near RTA, dorsum of tibia with a spine and prolateral with three spines close to each other. Tegular apophysis absent. Embolus short and filiform. Bulb simple and convex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.23	0.53	0.88	0.85	0.73	4.22
2	1.38	0.65	1.13	0.98	0.77	4.91
3	0.88	0.43	0.60	0.50	0.46	2.87
4	1.00	0.40	0.63	0.54	0.44	3.01
Pedipalp	0.30	0.25	0.29	–	0.46	1.30

Abdomen yellowish brown with five pale brown spots dorsally, edges all yellow, and bearing five or six transverse striations, posteriorly tapering to the anal tubercle, broadest part tubercle-like, each with a black spot. Venter yellow-brown with a cowboy-hat-like brown band between yellow book lungs and epigastric furrow. Anterior spinnerets distinctly separated by a distance equal to the diameter of the apical segment of one spinneret, and posterior pair widely separated.

Female: Total length 10.40 mm. Cephalothorax 3.90 mm long, 3.90 mm wide, 2.60 mm high. Abdomen 6.50 mm long, 6.60 mm wide, 5.40 mm high. Cephalothorax yellowish brown with a V-shaped white band running from foveal area to PLE, white transverse ridge in the eye area forming lateral tubercles and becoming a triangular white band towards clypeus, with a brown tinge on the inner side. Eight eyes in two rows, AE more recurved but shorter (1.99 mm) than the moderately recurved PE row (2.43 mm). Eye diameter (mm): ALE = 0.13, AME = 0.11, PLE = 0.10, PME = 0.09. Eye separation: AME–AME 3.9 times eye diameter, AME–ALE 4.8 times AME diameter, PME–PME 8.45 times

AME diameter, PME–PLE 5.5 times AME diameter, ALE–PLE 2.5 times PLE diameter. Median ocular quadrangle narrower in front (0.63 mm) than behind (1.10 mm), both widths more than length (0.58 mm). Clypeus very wide, 6.5 times AME diameter. Sternum longer (1.90 mm) than wide (1.40 mm), yellow except for a pair of sublateral elongate white bands in apical one third. Labium same color as sternum and maxillae, distal end nicely rounded. Maxillae longer than wide, with a white spot subdistally, inner apical parts moderately towards each other. Chelicerae short but robust, yellow with white patches ventrally and frontally, and promargin with two teeth. Legs yellowish brown with white patches in venter of coxae, trochanter prolateroventral to femora I along both ends and middle part, dorsal apices of femora and patellae I and II, tibia I with three dorsal white spots (anterior end, midhalf, posterior end) and a midprolateral black spot, metatarsi I white dorsally both ends and bearing a black spot midprolaterally. Spination in femora I = 1-0-3-0; tibiae I = 1-7(1-2-2-2) -0-0, metatarsi I = 0-12(2-2-2-2-2-2)-0-0. Tarsi two-clawed, each superior claw with three or four teeth in leg I. Leg formula 1243. Pedipalp a little shorter than tibia I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.60	1.95	2.90	2.20	1.55	12.20
2	3.30	1.90	2.60	2.25	1.50	11.55
3	2.00	1.10	1.40	1.00	0.90	6.40
4	2.10	1.10	1.60	1.30	0.80	6.90
Pedipalp	0.90	0.40	0.55	–	0.95	2.80

Abdomen white with five spherical brown spots and a pair of lateral tubercles a little below midhalf. Anterior end strongly rounded, widest below midhalf, and moderately tapered towards spinnerets. Venter white except the black sclerotized epigynum, brown colulus, gray tracheal spiracle, and alternately brown-white and yellow-brown anterior spinnerets, which are close to each other. Posterior spinnerets yellow and wide apart. Epigynum very simple, a sclerotized black plate with an orifice dorsal to it and a blackish brown spot on each side. Spermathecae globular with short spermathecal ducts.

Natural history: Males are collected almost year-round, from January to October, from rice, mungbean, soybean, and maize.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Alcala, one male, 21 September 1981, A.T. Barrion, Batañgas Prov., Lipa, Marauoy Vill., one female, 10 August 1987, M. Perez, Tanauan, Janopol Vill., one male and one female, 10 July 1977, R. Apostol; Cale Vill., five females, 7 March 1979, A.T. Barrion, three females and one immature, 15 September 1979, A.T. Barrion; Laguna Prov., Los Baños, IRRI Farm, one female and five immatures, Tanauan, 10–17 September 1977, A.T. Barrion; Pangasinan Prov., Manaoag, Lipit Vill., one male, 10 April 1981, J. Bandong; Cavite Prov, Alfonso, two males, 5 October 1979, R. Apostol and O. Serrano; *Panay Is.*, Iloilo, Oton, San Miguel Vill., two males and one female (immature), 3 August 1977, A.T. Barrion; *Palawan Is.*, Palawan Prov., Batarasa, one female, 25 September 1987, A.T. Barrion; *Mindanao Is.*, South Cotabato Prov., Koronadal, Barangay Uno Vill., one male, 5 January 1982, A.T. Barrion. **THAILAND:** Prachinburi, Prachinburi Rice Research Station, one male, 7 August 1989, A.T. Barrion. **INDONESIA:** Yogyakarta, Klaten Vill., one male, 26 August 1989, A.T. Barrion.

Distribution: Japan, Thailand, Taiwan, Philippines (new record) and Indonesia (new record).

Remarks: One female collected from rice panicle in September has gray-brown bands on coxae, trochanter, all leg segments, except tarsi, maxillae, entire labium and W-shaped in sternum. The Palawan-collected female with about 70 spiderlings has six pairs (apical two pairs very broad) of gray-brown abdominal spots, with inner area of each of the broad spots white, cephalothorax with two broad subdorsal and one narrow foveal longitudinal brown bands, and sternum, maxillae, labium, and leg segments, except tarsi, bear gray-brown spots.

Thomisus iswadus new species

(Fig. 134a–g)

Description:

Female: Total length 7.5 mm. Cephalothorax 3.50 mm long, 3.40 mm wide, 2.20 mm high. Abdomen 4.00 mm long, 5.40 mm wide, 2.80 mm high. Cephalothorax dark reddish brown with a broad white band in the foveal area and narrow white lines in the tubercles of the ocular region. Eye pattern as in the genus *Thomisus.* Eye diameter (mm): ALE = 0.12, PLE = AME = 0.10, PME = 0.09 mm. Eye separation (mm): PME–PME = 0.83, PME–PLE = 0.56, ALE–AME = 0.48, AME–AME = 0.45. Median ocular quadrangle wider behind than in front. Clypeus height large, 4.8 times wider than AME diameter. Sternum longer than wide, yellow, and lined with brown hairs. Labium longer than wide, yellow-brown except a white inverted U-shaped band at apical one half. Maxillae mostly white except for brown mottles. Chelicerae vertical, reddish brown with white patches. Legs I and II longer than III and IV, yellow-brown with white spots in femora, patellae and tibiae of legs I and II, basal one half of tarsus I with a narrow black band, legs III and IV short and reddish brown. Spination in tibial venter I = 5(1-1-1-2), II = 3(1-0-2); metatarsi I and II = 7(2-1-2-2). Leg formula 1243. Pedipalp yellow, nearly as long as combined length of femur III and patella III, and bears a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.25	1.25	2.10	1.70	1.45	9.75
2	3.10	1.55	2.00	1.60	1.40	9.65
3	1.60	0.75	1.20	1.05	0.70	5.30
4	1.90	0.90	1.30	1.10	0.85	6.05
Pedipalp	0.75	0.40	0.50	–	0.65	2.30

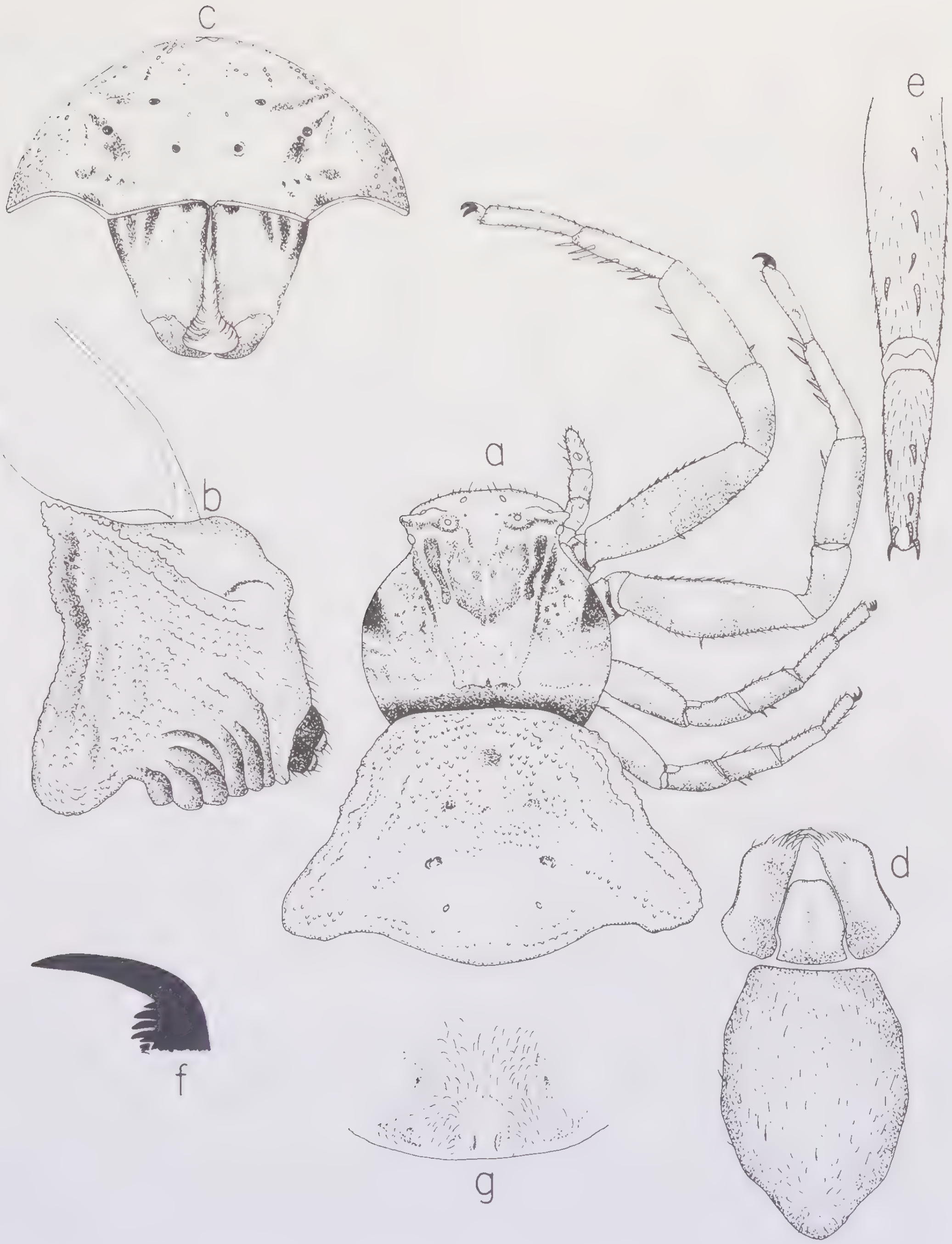

Fig. 134. Female *Thomisus iswadus* n. sp. (a); side view of abdomen (b); frontal view of head (c); sternum, labium, and maxillae (d); ventral view of tibia I and metatarsus I (e); claw teeth (f); and epigynum (g).

Abdomen chalk-white with seven brown sigilla, concave medially, producing subposterolateral tubercles, and with transverse ridges posteriorly. Venter slightly reddish brown with whitish ridges. Reddish brown spinnerets compact. Epigynum simple with a pair of brownish transversely parallel orifices.

Etymology: Named after the posterior view of abdomen, projected outwards (in Tagalog 'iswad').

Natural history: Sweep-net-collected from lowland rice in June.

Material examined: PHILIPPINES: *Mindanao Is.*, Misis Oriental, Claveria-Villanueva, 0.6 km NE of town

proper, holotype female, 24 June 1986, E. Libetario.
Distribution: Philippines.

Thomisus ilocanus new species
(Fig. 135a–g)

Description:
Female: Total length 8.20 mm. Cephalothorax 3.20 mm long, 3.50 mm wide, 2.90 mm high. Abdomen 5.00 mm long, 5.75 mm wide, 4.00 mm high. Cephalothorax wider than long, brownish yellow with white transverse band in the eye area, truncated anteriorly with fore corners, strongly protuberant and divergent, containing ALE and PLE. Eight eyes in two rows, all dark except light-colored AME, AE row recurved and shorter (1.85 mm) than the slightly recurved PE row (2.23 mm). Eye diameter (mm): ALE = 0.13, AME = 0.10, PME = PLE = 0.08. Eye separation: AME–AME four times AME diameter, AME–ALE 5.5 times diameter of AME, PME–PME nine times AME diameter, PME–PLE 5.8 times diameter of AME, ALE–PLE 3.5 times AME diameter. Median ocular quadrangle wider behind (1.10 mm) than in front (0.65 mm) and length (0.60 mm). Clypeus height large, 6.5 times diameter of AME. Sternum yellow-brown, lined with erect hairs, longer (1.75 mm) than wide (1.25 mm), anterior margin concave, posterior end tapers to a narrow ridge, extended to pedicel, and lateral edges opposite coxae straight. Labium color similar to sternum and maxillae, dome-shaped, distally rounded, and proximally concave. Maxillae longer (0.85 mm) than wide (0.45 mm), slightly convergent, outer lateral margin concave opposite base of pedipalp. Chelicerae light brown with short erect setae dorsally, thin scopulae and two teeth in the promargin, retromargin without teeth, and fang short, small, and sickle-shaped. Legs I and II yellow-brown with gray to black spots in the midprolaterals of femora, tibiae, and metatarsi, legs III and IV yellow without gray to black spots. Tibiae I with four ventral spines (one prolateral and three retrolateral) and II with two (one prolateral and one retrolateral). Metatarsi I and II each with five pairs of ventral spines (five prolateral and five retrolateral). Tibiae and metatarsi III and IV without ventral spines, dorsobasal one half of tibia IV bears 32 spines and about 11 short (seven) and long (four) trichobothria. Tarsi two-clawed without claw tuft, each claw in leg I with at least five teeth. Leg formula 1243. Pedipalp longer than tibia I, tarsi bear scopulae and a single claw with three or four teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.40	1.75	2.55	1.85	1.40	10.95
2	3.20	1.65	2.5	2.10	1.50	10.90
3	1.60	1.10	1.35	1.00	0.85	5.90
4	1.90	1.00	1.55	1.30	0.95	6.70
Pedipalp	0.75	0.50	0.50	–	0.85	2.60

Abdomen chalk-white with five light brown spherical spots, wider than long and broadest at midlength, with blunt tubercles and strongly rounded anterior margins. Venter and laterals chalk-white, similar to dorsum, except yellow spinnerets in the posterior one third of abdomen and yellow-brown epigynum with a black ovoid band. Anterior spinnerets robust and close to each other basally, with apical segment projected toward each other. Posterior spinnerets pale yellow, wide apart, and more slender than the anterior pair. Epigynum bears dorsally a yellow-brown sclerotization with a small median transverse ovoid black mark anterior to the epigastric furrow. Spermathecal organ light brown, globose, and lined with very fine hairs. Spermathecae multiloop and subglobular.
Etymology: Named after the people of its type locality, the Cagayan Valley dominated by the Ilocanus.
Natural history: The single specimen was suction collected by D-Vac machine from irrigated lowland rice in October.
Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Bangag Vill., holotype female, 31 October 1980, A. Alviola and B. Canapi.
Distribution: Philippines.

Genus *Taypaliito* New Genus

Description: Small-sized thomisid, barely 2.40 mm long. Cephalothorax black, squarish dorsally, and angled almost 80° posterior of thorax, strongly sclerotized and moderately smooth except for some short scattered lateral setae. Eight eyes in two recurved rows, less recurved AE row longer than strongly recurved PE row. Eye diameter: ALE > PLE ⩾ AME > PME. ALE in the anterolateral corner of cephalothorax projected at 45° angle. Eye separation: PME–PME > PME–PLE > AME–ALE > AME–AME. Clypeus moderately narrow, a little wider than AME. Sternum longer than wide, anterior margin subtruncate, lateral margins prominently serrated, and posterior end truncate between coxae IV. Labium longer than wide and constricted laterally in posterior one half. Maxillae longer than wide, obliquely truncate apically, and excavated at outer midhalf laterally. Chelicerae vertical with two minute promarginal and one retromarginal teeth. Anterior of promargin bears a transverse row of yellow blunt hairs. Legs I and II much longer than III but only slightly larger than IV, trochanter IV heart-shaped ventrally, femora and metatarsi dark red brown with yellow patellae, metatarsi, and tarsi. Apicoventral one fourth of femora constricted. Tibiae I and II with 0-0-2-2 spination; metatarsi I and II with 0-2-2-2 spination. Tarsi two-clawed, each claw with seven to nine teeth and with weak claw tuft. Tm II = 0.86. Leg formula 2143. Pedipalp brown, as long as femur II, patella with a very strong and long apicodorsolateral spine, RTA and VTA strongly developed, RTA strongly sclerotized with a blunt tip, and apex of VTA inwardly curved towards tegulum, devoid

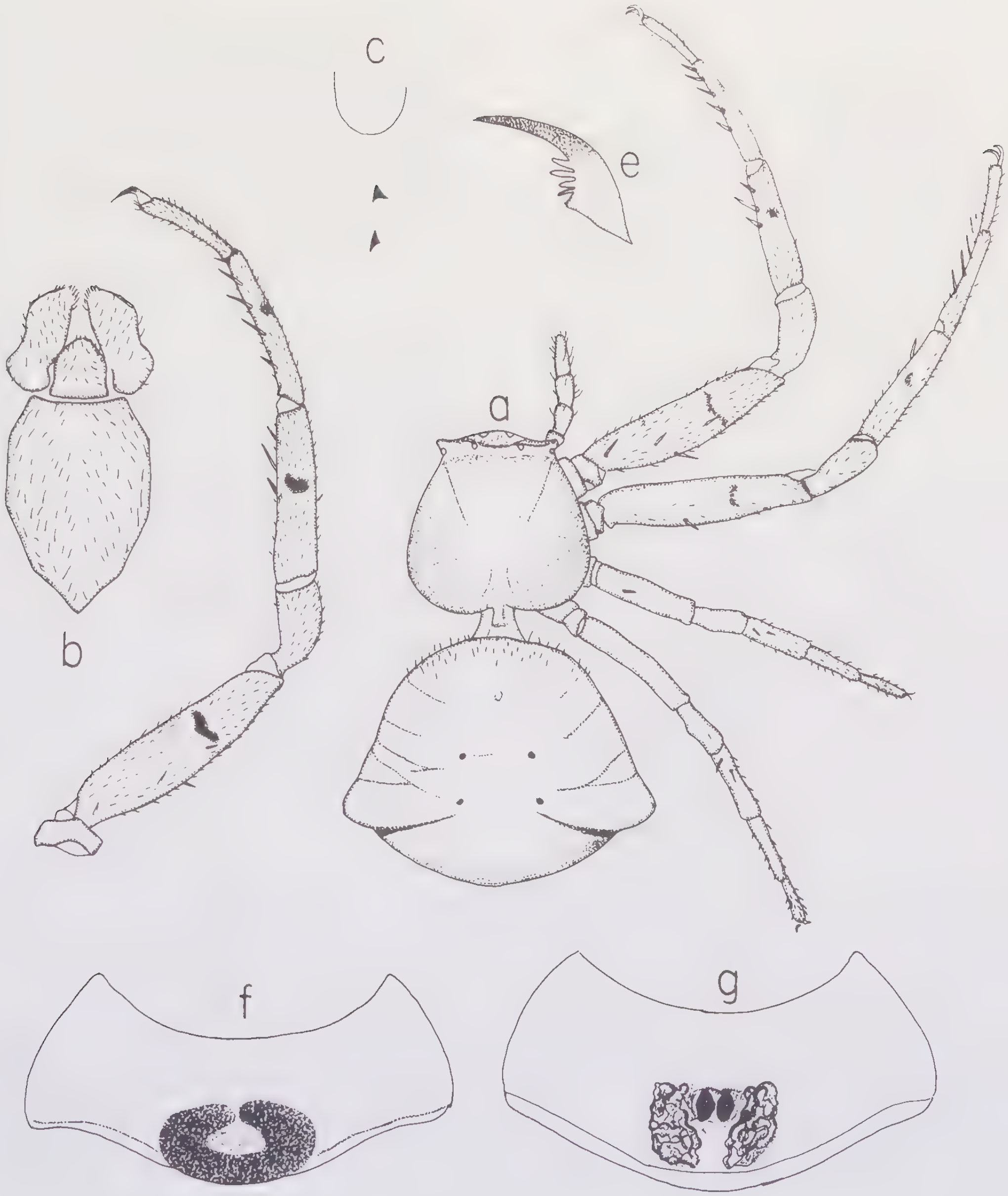

Fig. 135. Female *Thomisus ilocanus* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); leg I (d); claw teeth (e); and dorsal (f) and ventral (g) views of epigynum.

of apophysis. Embolus thin and filiform. ITA absent. Abdomen blackish brown, ovoid, and flat, with five brown spots and five or six transverse yellow bands with black mottles in the posterior one sixth. Venter brown medially and grayish brown with yellow tinge along all margins, orifice of pedicel connection at centermost and highest part, allowing apical one half of abdomen to overhang thorax, lateral sides with ovate book lungs, and posterior part of orifice with five globular light brown spots. Spinnerets in a transverse circular ring viewed posteriorly, anterior spinnerets more robust than the posterior pair, separated basally but apices toward each other.

Type species: *Taypaliito iorebotco* n. sp.

Diagnosis: The genus runs close to *Coriarachne* Thorell, 1870 and *Bassaniana* Strand, 1928 but differs from the two genera in terms of shape and character of cephalothorax, eye size and separation, presence of teeth in chelicerae, leg spination and color combination, seven to nine teeth in the tarsal claws, shape of pedipalp and abdomen. It also resembles *Stiphropus* Gerstaecker, 1873 in shape, however, the new genus lacks branch hairs

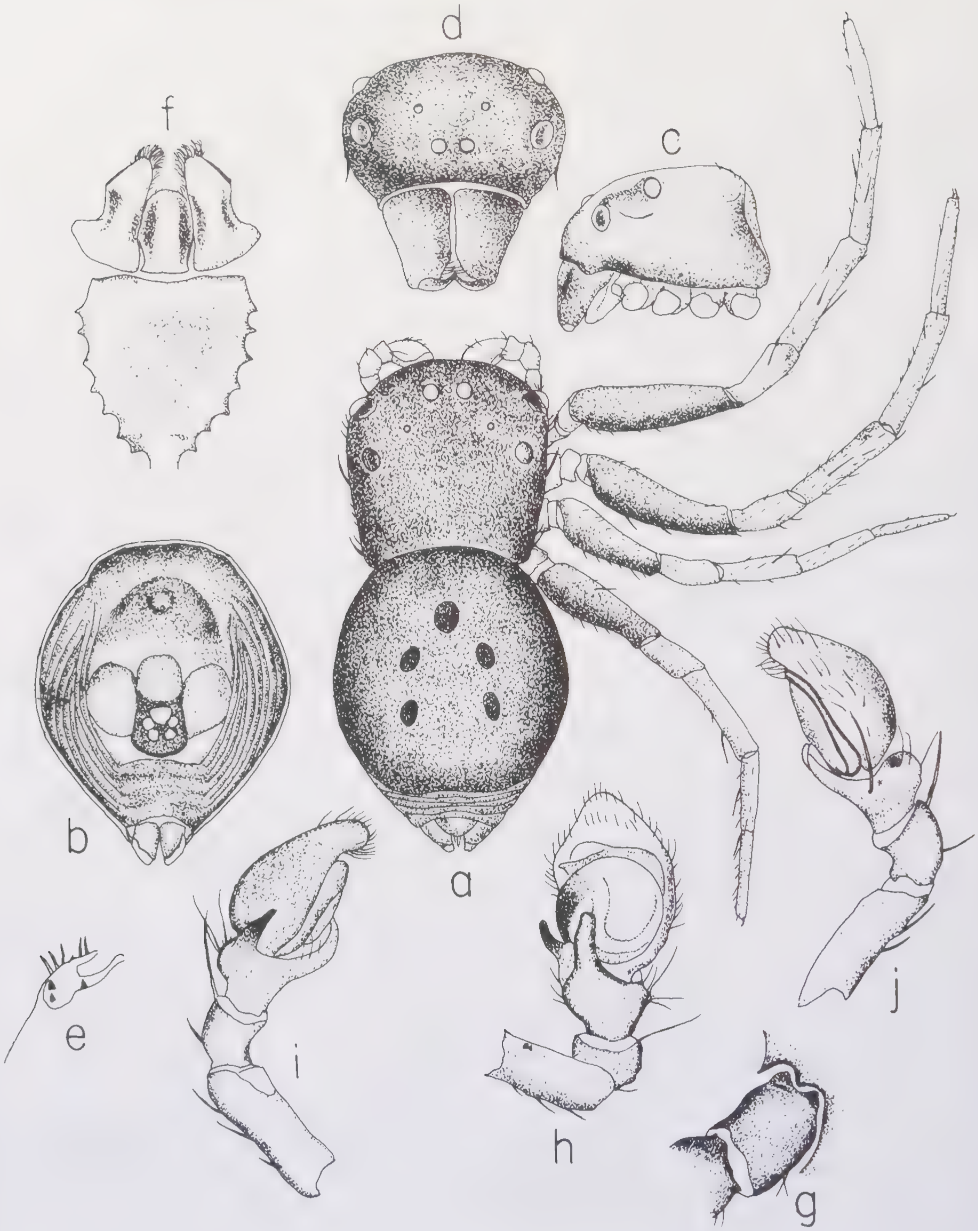

Fig. 136. Male *Taypaliito iorebotco* n. gen. and sp. (a); abdominal venter (b); side (c) and frontal (d) views of cephalothorax; cheliceral teeth (e); sternum, labium, and maxillae (f); coxa IV (g); ventral (h) and lateral (ij) views of pedipalp.

in the pedipalps and legs.

Etymology: Combination of the Tagalog and Taglish term for constricted ('paliit') femora ('tay') + o; it is in masculine form.

Taypaliito iorebotco new species
(Fig. 136a–j)

Description:

Male: Total length 2.34 mm. Cephalothorax 1.14 mm long, 1.08 mm wide, 0.78 mm high. Abdomen 1.20 mm long, 1.20 mm wide, 0.63 mm high. Cephalothorax black, slightly longer than broad, squarish dorsally, strongly sclerotized, moderately smooth, and posterior part of thorax angled to almost 80°. Eight eyes in two recurved rows, less recurved AE longer (1.00 mm) than the strongly recurved (0.93 mm), ALE in the antero-lateral corner of cephalothorax projected at 45° angle. Eye diameter (mm): ALE = 0.14, PLE = 0.09, AME = 0.08, PME = 0.05. Eye separation: AME–AME 1.25 times eyes diameter, AME–ALE three times diameter of AME,. PME–PME four times AME diameter, PME–PLE 3.13 times AME diameter, ALE–PLE twice diameter of AME. Median ocular quadrangle wider behind (0.34 mm) than in front (0.26 mm), both widths longer than length. Clypeus height moderately small, slightly wider than one AME diameter. Sternum black, longer than wide, anterior margin subtruncate, lateral margins strongly serrated, and posterior end narrowly truncate between coxae IV. Labium longer than wide, apex rounded, sublaterals with a longitudinal reddish black band and constricted laterally at posterior one half. Maxillae similar in color to the labium, apex obliquely truncate, and midhalf of outer laterals deeply excavated. Chelicerae vertical, small with two minute promarginal and one retromarginal tooth. Promarginal teeth lined with blunt yellow hairs dorsally in transverse pattern. Legs moderately short, dark reddish brown except yellow-brown patellae, metatarsi and tarsi I and II much longer than III and IV, trochanter IV heart-shaped ventrally, and apicoventral one fourth of femora constricted. Spination in tibiae I and II = 0-0-2-2, metatarsi I and II = 0-2-2-2. Tarsi two-clawed with undeveloped claw tufts, each claw with seven to nine teeth. Tm II = 0.86. Leg formula 2143. Pedipalp brown as long as femur II, patella with a strong and long apicodorsolateral spine. RTA and VTA prominently developed, ITA absent, RTA strongly sclerotized with a blunt tip. VTA almost as long as RTA, with a more blunt apex curved inwards tegulum. Cymbium longer than wide. Tegulum without apophysis. Embolus thin and filiform.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.85	0.31	0.60	0.51	0.48	2.75
2	0.88	0.33	0.65	0.53	0.45	2.84
3	0.55	0.28	0.45	0.33	0.33	1.94
4	0.63	0.24	0.45	0.36	0.33	2.01
Pedipalp	0.25	0.14	0.20	–	0.30	0.89

Abdomen strongly sclerotized, blackish brown, ovoid and flat with five brown spots in the middle and five or six transverse yellow bands, mottled black in the posterior one sixth. Venter highest at midlength, with flattened, striated, and mottled black lateral margins. Midpoint of venter with a large circular orifice for the pedicel, each side bears large brown ovate book lungs and five small, subglobular brown spots posterior to orifice. Spinnerets in a transverse circular orifice viewed posteriorly, anterior pair more robust than the posterior pair, with separate bases but nearly converging apices.

Etymology: The specific epithet is a garbled word for October 10 (loyalty day, University of the Philippines (UP) at Los Baños) when the species was named.

Natural history: Berlese extracted from soil–leaf litter sample collected from a secondary dipterocarp forest in October.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Aborlan, Cabigaan Vill., Mt. Cabigaan Area, 28.6 km NW of Aborlan, holotype male, 2 October 1987, A.T. Barrion.

Distribution: Philippines.

Genus *Camaricus* Thorell

Camaricus Thorell, 1887. Ann. Mus. Civ. Stor. Nat. Gen. 5(2): 261.

A small genus of crab-like spiders with barely 15 described species scattered in tropical Africa, India, and Malaysia. *Camaricus* Thorell has a moderately high, square-like to parallel-sided cephalothorax, wider in front; eyes in two recurved rows, ME wide apart and closer to LE than to each other; eye diameter: ALE > PLE > AME > PME; MOQ wider behind than in front; clypeus height distinctly large; sternum longer than wide; labium slightly longer than broad; legs moderately short with less developed spines; abdomen oblong to subglobular with dorsal markings.

Camaricus florae new species

(Fig. 137a–e)

Description:

Male: Total length 2.58 mm. Cephalothorax 1.20 mm long, 1.20 mm wide, 0.85 mm high. Abdomen 1.38 mm long, 1.48 mm wide, 1.08 mm high. Cephalothorax brown to grayish brown, as wide as long with long black setae both in the cephalic and thoracic areas. Eight eyes in two recurved rows, AE less recurved and a little longer (1.00 : 0.90 mm) than the strongly recurved PE row. Eye diameter (mm): ALE = 0.11, PLE = 0.08, AME = 0.06, PME = 0.03. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.29, ALE–PLE = 0.18, PLE–PME = 0.28, PME–PME = 0.33, PLE–PLE = 0.75. Median outer quadrangle 1.6 times wider behind than in front, anterior width shorter than height (0.25 : 0.30 mm). Clypeus height large, 2.5 times AME diameter. Sternum longer (0.56 mm) than wide (0.48 mm), pale brown except longitudinal gray band in the middle median area high, anterior end concave, lateral margins opposite coxae serrated, and posterior end truncate beyond coxae IV. Labium brown except pale yellow brown apex, slightly longer than broad. Maxillae yellow, longer than wide, midlateral margin on the outer side slightly concave. Chelicerae vertical, brownish except yellow base close to clypeus, with a minute retromarginal tooth close to fang base. Legs short, femora and tibiae grayish brown and the rest yellow, spines present in tibiae and metatarsi. Femur I without prolateral and retrolateral spines. Tibia I with three (1–2) and II has no ventral spines. Metatarsi I and II each with a pair of ventral spines. Leg formula 2143. Pedipalp slightly longer than combined length of metatarsus II and tarsus II; developed VTA yellow, unsclerotized, and tapered apically, sides of VTA with three or four hairs; RTA similarly developed, sclerotized in the tapering apex; VTA and RTA forms a V-shaped area; tibia bears a dorsal and four prolateral spines; embolus long, thin, and spiral; bulb without apophysis.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.75	0.31	0.55	0.50	0.41	2.52
2	0.81	0.33	0.63	0.49	0.38	2.64
3	0.55	0.24	0.40	0.29	0.23	1.71
4	0.60	0.25	0.42	0.34	0.28	1.89
Pedipalp	0.36	0.10	0.09	–	0.33	0.88

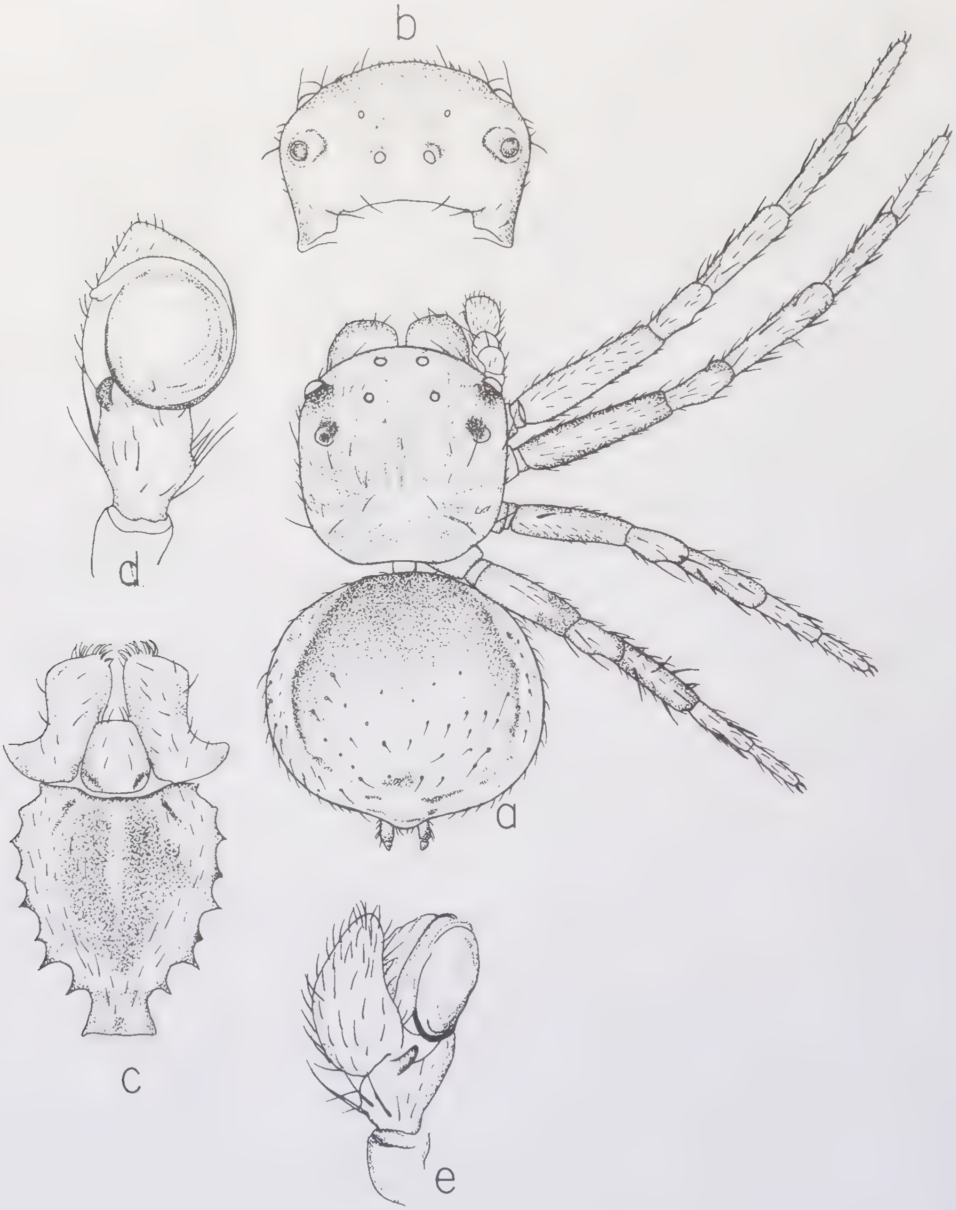

Fig. 137. Male *Camaricus florae* n. sp. (a); frontal view of head (b); sternum, labium, and maxillae (c); and ventral (d) and lateral (e) views of pedipalp.

Abdomen globular to slightly wider than long, light brown with circular black ring dorsally and clothed with short fine setae. Spinnerets as in the genus, not visible dorsally.

Etymology: Dedicated to my mother, Aling Flora.

Natural history: The holotype male was collected by D-Vac suction machine from dibbled upland rice in Mt. Makiling near Jamboree site in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, Mt. Makiling, holotype male, 18 August 1988, A.T. Barrion and Ben Garcia.

Distribution: Philippines.

Camaricus formosus Thorell
(Fig. 138a–b)

Camaricus formosus Thorell, 1887. Ann. Mus. Civ. Stor. Nat. Gen. 5(2): 261.

C. fornicatus Thorell, 1890. Arach. Nies. de Sumatra 10(2): 60.

Redescription:

Female: Total length 7.73 mm. Cephalothorax 3.35 mm long, 2.65 mm wide, 2.20 mm high. Abdomen 4.38 mm long, 4.05 mm wide, 3.6 mm high. Cephalothorax squarish, orange-red except black eye area and lateral margins and black patch in the thoracic groove area and high.

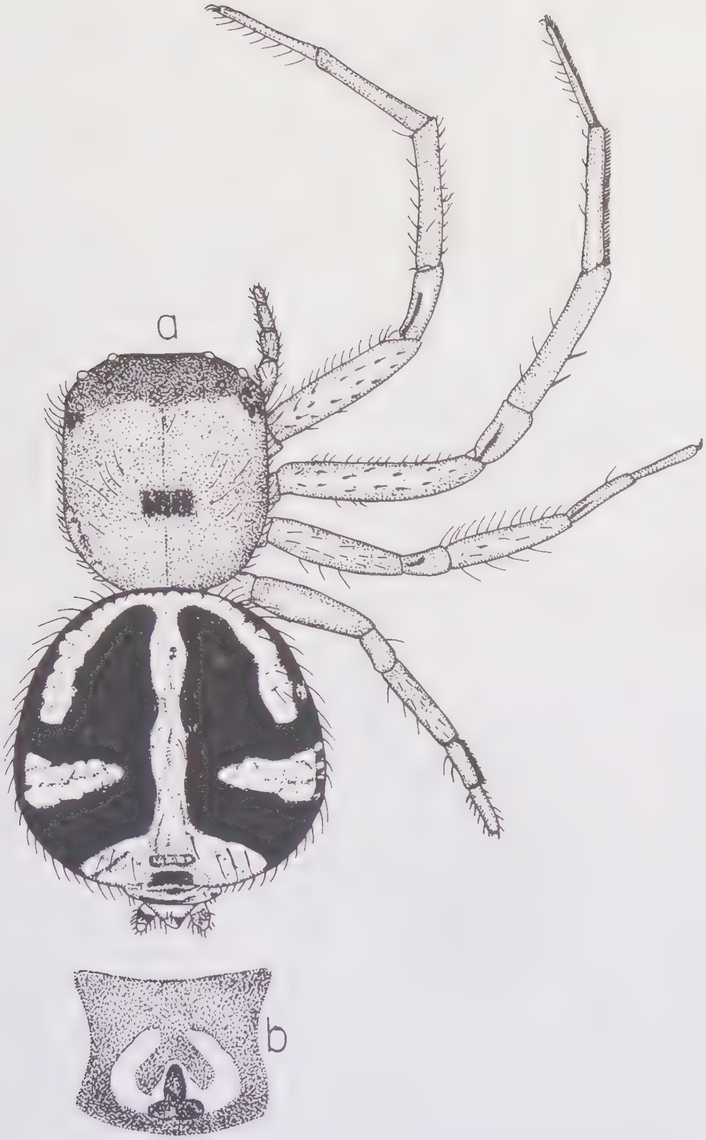

Fig. 138. Female *Camaricus formosus* Thorell (a); and epigynum (b).

Eyes in two recurved rows, PE slightly longer than AE row, middle eyes very adjacent to lateral eyes. Eye diameter: ALE > PLE > AME > PME. Eye separation: AME–AME more than twice AME–ALE separation, PME–PME approximately three times PME–PLE separation. Median ocular quadrangle wider than long, slightly wider behind than in front. Sternum heart-shaped, pointed behind, truncate anteriorly, and clothed with fine hairs. Labium longer than wide. Maxillae moderately concave midlaterally on the outer side, apices slightly converging. Chelicerae light or dark brown. Legs robust, with hairs and spines, patellae, metatarsi and tarsi with longitudinal stripes (very distinct in legs I and II). Metatarsi I and II with six (2-2-2) pairs of ventral spines. Leg formula 2134. Pedipalp yellow, as long as femur III.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.70	1.30	1.05	0.95	5.50
2	1.80	0.65	1.40	1.25	0.85	5.95
3	1.15	0.40	1.10	0.65	0.60	3.90
4	1.05	0.35	0.90	0.40	0.50	3.20
Pedipalp	0.45	0.30	0.25	–	0.20	1.20

Abdomen dark brown, longer than wide, broadest at midlength, medianly decorated by a chalk-white anchor-like band, and laterals each with a triangular transversely set band projected towards each other, venter light brown except median with a broad longitudinal brown patch running from epigastric furrow to the base of spinnerets. Epigynum simple with a transverse W-shaped transparent light band and a semitriangular

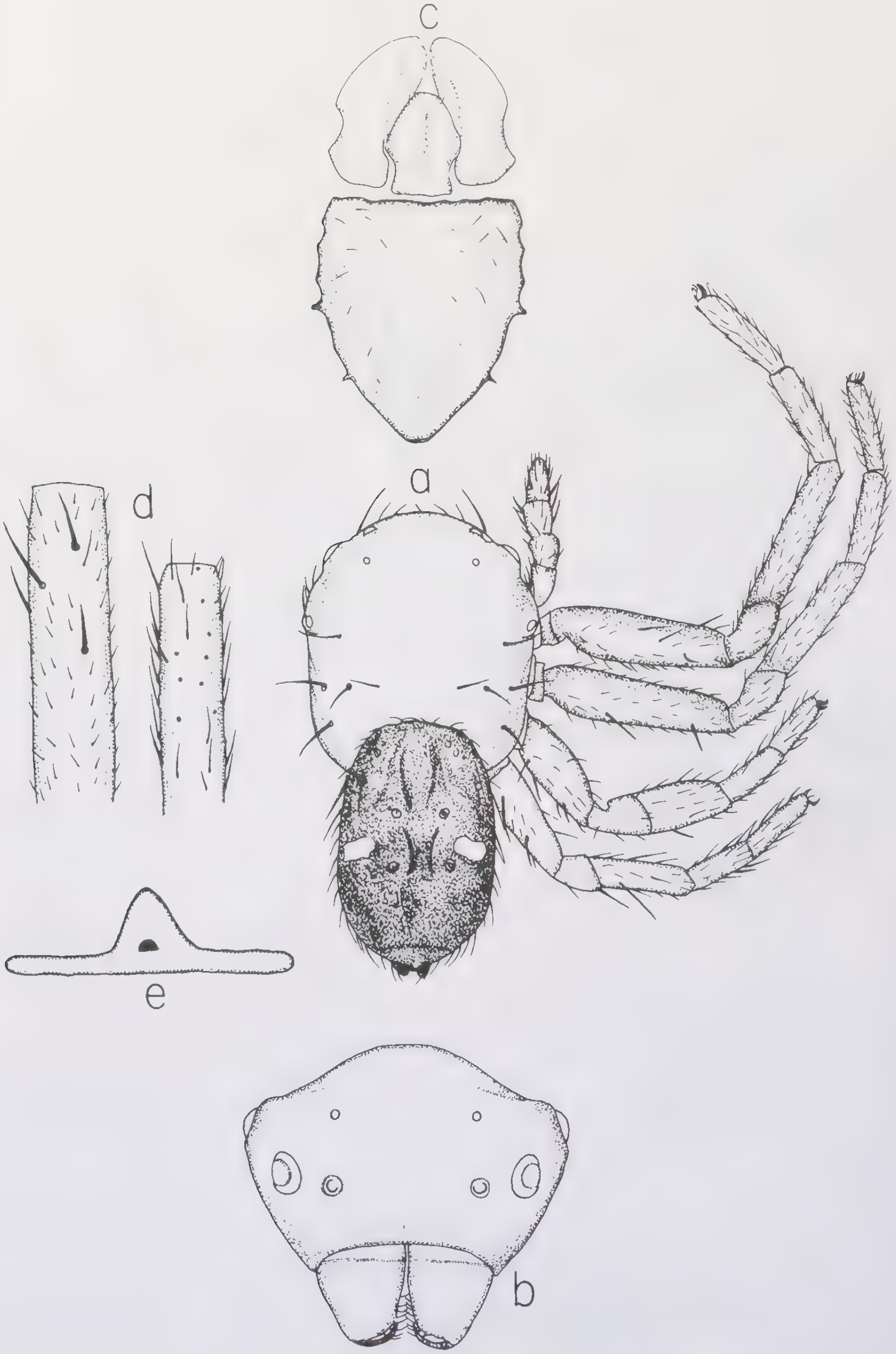

Fig. 139. Female *Camaricus parisukatus* n. sp. (a); frontal view of head (b); sternum, labium, and maxillae (c); femur I and metatarsus I (d); and epigynum (e).

sclerotized plate between the light band and epigastric furrow.

Natural history: The single female specimen was collected from irrigated ricefield damaged by blackbug, *Scotinophara coarctata* F. This thomisid was observed to prey on nymphs of blackbugs.

Material examined: PHILIPPINES, *Palawan Is.*, Palawan Prov., Aborlan, PNAC area, one female, 16 March 1984, V. Perez.

Distribution: Philippines, India, Burma, and Indonesia.

Camaricus parisukatus new species
(Fig. 139a–e)

Description:

Female: Total length 2.80 mm. Cephalothorax 1.40 mm long, 1.30 mm wide, 0.85 mm high. Abdomen 1.40 mm long, 0.90 mm wide, 0.65 mm high. Cephalothorax brown without a black median band, cephalic area slightly wider than the thoracic area, with long spines forming a square set of spines on each side of the foveal area. Eight eyes in two rows, shorter AE row less recurved than PE row. Eye diameter (mm): ALE = 0.15, PLE = 0.11, AME = 0.08, PME = 0.04. Eye separation (mm): AME–AME = 0.50, AME–ALE = 0.12, ALE–PME = ALE–PLE = 0.20, PME–PLE = 0.33, PME–PME = 0.48. MOQ wider in front (0.60 mm) than behind (0.56 mm), anterior width 2.4 times longer than height (0.25 mm). Clypeus height large, a little more than three times AME diameter. Sternum yellow-brown, slightly longer (0.55 mm) than wide (0.53 mm), anterior end truncate and posterior end shortly pointed between coxae IV. Labium longer than wide, brown becoming yellowish brown at the rounded anterior end. Maxillae brown, longer than wide, apices converging. Chelicerae brown, vertical, and small. Legs yellowish brown, short with few spines. Femur I with two prolateral and two dorsal spines. Leg formula 2143. Pedipalp yellow, total length longer than either femur I or II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.00	0.48	0.83	0.60	0.53	3.44
2	1.05	0.50	0.88	0.63	0.58	3.64
3	0.63	0.38	0.65	0.40	0.38	2.44
4	0.80	0.30	0.73	0.38	0.38	2.59
Pedipalp	0.43	0.18	0.18	–	0.35	1.14

Abdomen black with a chalk-white oblong spot on each lateral side, oblong and clothed with yellow setae, median dorsal portion with four spherical spots, spinnerets partially visible in dorsal view. Epigynum simple with a small brown slightly sclerotized plate hidden within the triangular to hat-like structure anterior to the epigastric furrow.

Etymology: Named after the squarish shape of the head seen dorsally, in Tagalog 'parisukat' + us.

Natural history: The holotype female was collected from Malaise trap set in an upland dibbled ricefield in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, Mt. Makiling, holotype female, 18 August 1988, A.T. Barrion and M. Perez.

Distribution: Philippines.

Genus *Misumenoides* F.O. Pickard-Cambridge

Misumenoides F.O. Pickard-Cambridge, 1900. Biol. Centr. Amer. Zool. 2: 136.

Small to medium-sized thomisids, 2.50–1.30 mm long. It is a small genus with about 20 nominal species scattered in the New World, with several species from India, closely resembles *Misumena* but differs in having a transverse white carina or ridge in the front of carapace. As a whole, the genus has a rather low carapace, smoothly convex towards lateral margins, and bears a few setae; eyes in two transverse recurved rows, PE more recurved than the AE row; legs I and II much longer and robust than III and IV, without prolateral or dorsal spines but bearing ventral spines; tarsi with two claws; abdomen flat, broad, whitish yellow, with red or brown marks, and lacking erect setae; pedicalp of male with a developed RTA and a small and simple VTA; embolus short, emanates from distal end of tegulum; epigynum of female slightly sclerotized with shallow atrium, broadly elevated hood, and broader than long spermathecae.

Misumenoides matinikus new species

(Fig. 140a–d)

Description:

Male: Total length 2.40 mm. Cephalothorax 1.00 mm long, 0.50 mm high. Abdomen 1.40 mm long, 1.00 mm wide, 0.60 mm high. Cephalothorax yellow-brown with numerous erect setae, slightly wider than long, clypeus and posterior part of PLE and thoracic area bear long setae. Head area with a pair of parallel transverse white bands anterior to AE row in the clypeus and anterior to PE row. Eight eyes in two recurved rows, each with a white ring, and LE on confluent white tubercles, PE row longer (0.73 mm) and more recurved than AE row (0.58 mm). Eye diameter (mm): ALE = 0.06, PLE = 0.05, AME = 0.04, PME = 0.03. Eye separation (mm): AME–AME = 0.13, AME–AME = 0.14, PME–PME = 0.23, PME–PLE = 0.20, ALE–PLE = 0.11. MOQ wider behind (0.28 mm) than in front (0.20 mm), anterior width and length equal. Clypeus height 2.25 times AME diameter. Sternum, labium, maxillae, and chelicerae all yellow and typical of the genus. Legs yellow except reddish brown apical one half of tibia and entire metatarsi of legs I and II, femora I bear three or four prolateral and dorsal spines, II with only one dorsal spine, III with three dorsal and IV with two dorsal spines. Tibiae I and II and metatarsi I and II without ventral spines, tibia I with an erect dorsal seta at midhalf, tibiae II and IV each with two erect dorsal spines and four trichobothria in between two spines. Tm I = 0.91. Tarsi two-clawed without claw tuft, each claw with at least three teeth. Leg formula 1243. Pedipalp as long as femur IV, RTA obliquely truncate apically with pointed tubercle, ITA absent, VTA small and slightly curved inside. Embolus long and filiform, circling the broad tegulum without apophysis.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.41	0.48	1.35	1.10	0.65	4.99
2	0.94	0.34	0.71	0.70	0.58	3.27
3	0.55	0.26	0.53	0.35	0.29	1.98
4	0.58	0.28	0.45	0.45	0.33	2.09
Pedipalp	0.30	0.15	0.16	–	0.33	0.94

Abdomen ovate, yellow, marked by five brown spots, and erect setae. Venter pale yellow with fine hairs. Epigastric furrow broadly V-shaped medially. Posterior spinnerets slender and wide apart. Anterior pair more robust and close to each other.

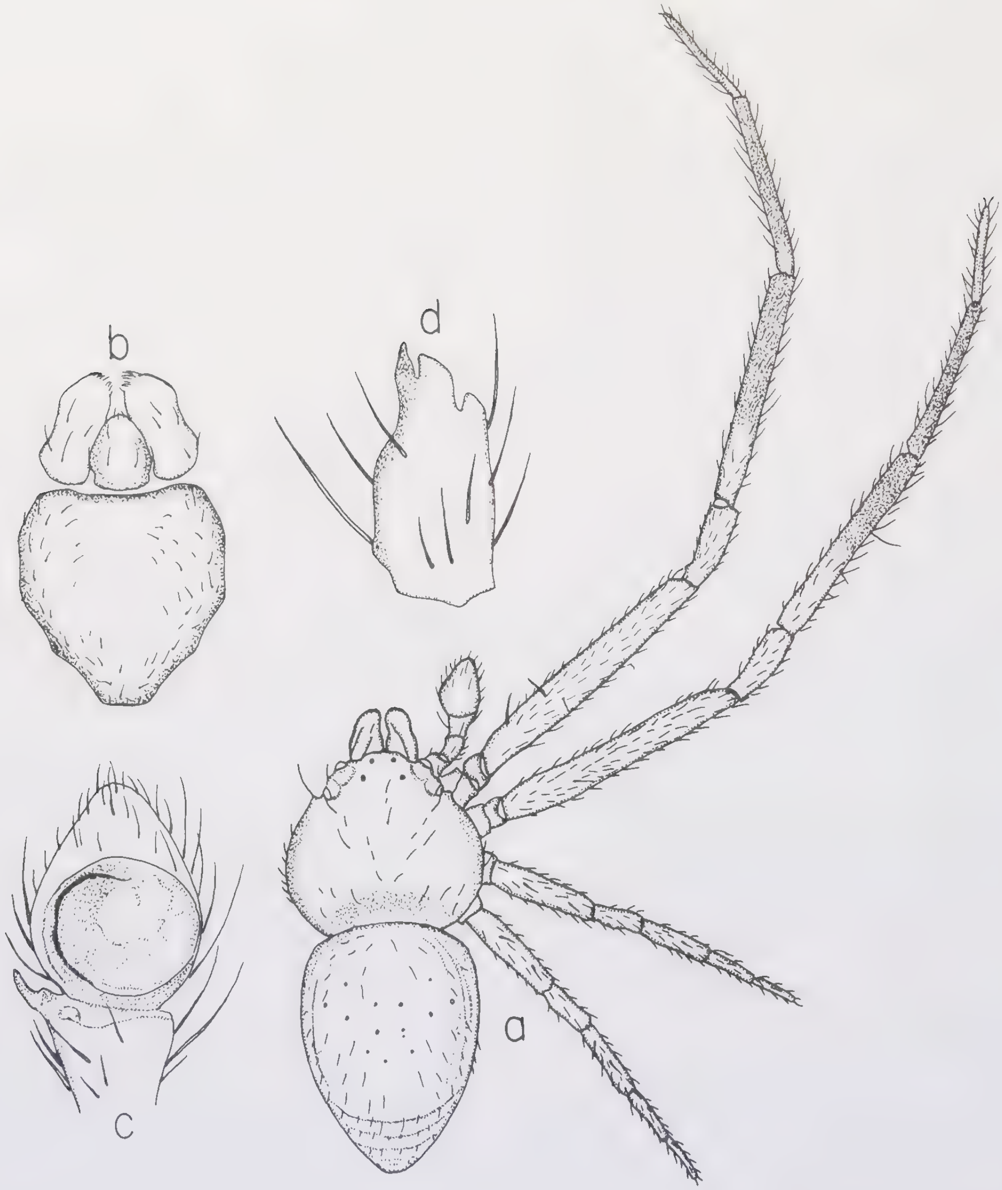

Fig. 140. Male *Misumenoides matinikus* n. sp. (a); sternum, labium, and maxillae (b); ventral view of pedipalp (c); and tibia of pedipalp (d).

Etymology: Specific epithet named after the spinous abdomen, 'matinik' in Tagalog.

Natural history: Six males were collected from 85-day-old upland rice in September using D-Vac suction machine and two males from KLT in October.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Kaparangan Vill., holotype male, 20 September. 1984, A.T. Barrion; Quezon Prov., Real, Llavac Vill. no. 8, two male paratypes, 9 October. 1984, R. Apostol; and five additional males with same data as holotype.

Distribution: Philippines.

Misumenoides pabilogus new species
(Fig. 141a–c)

Description:

Female: Total length 5.10 mm. Cephalothorax 1.80 mm long, 1.90 mm wide, 1.10 mm high. Abdomen 3.30 mm long, 2.90 mm wide, 1.50 mm high. Cephalothorax yellow-brown, setaceous, bears three longitudinal white lines, emanating from a common point (fovea), extending to PLE and mid-PME, clypeus, and in between AE and PE rows with a concave white band. Eight eyes in two recurved rows, AE row shorter (0.91 mm) than

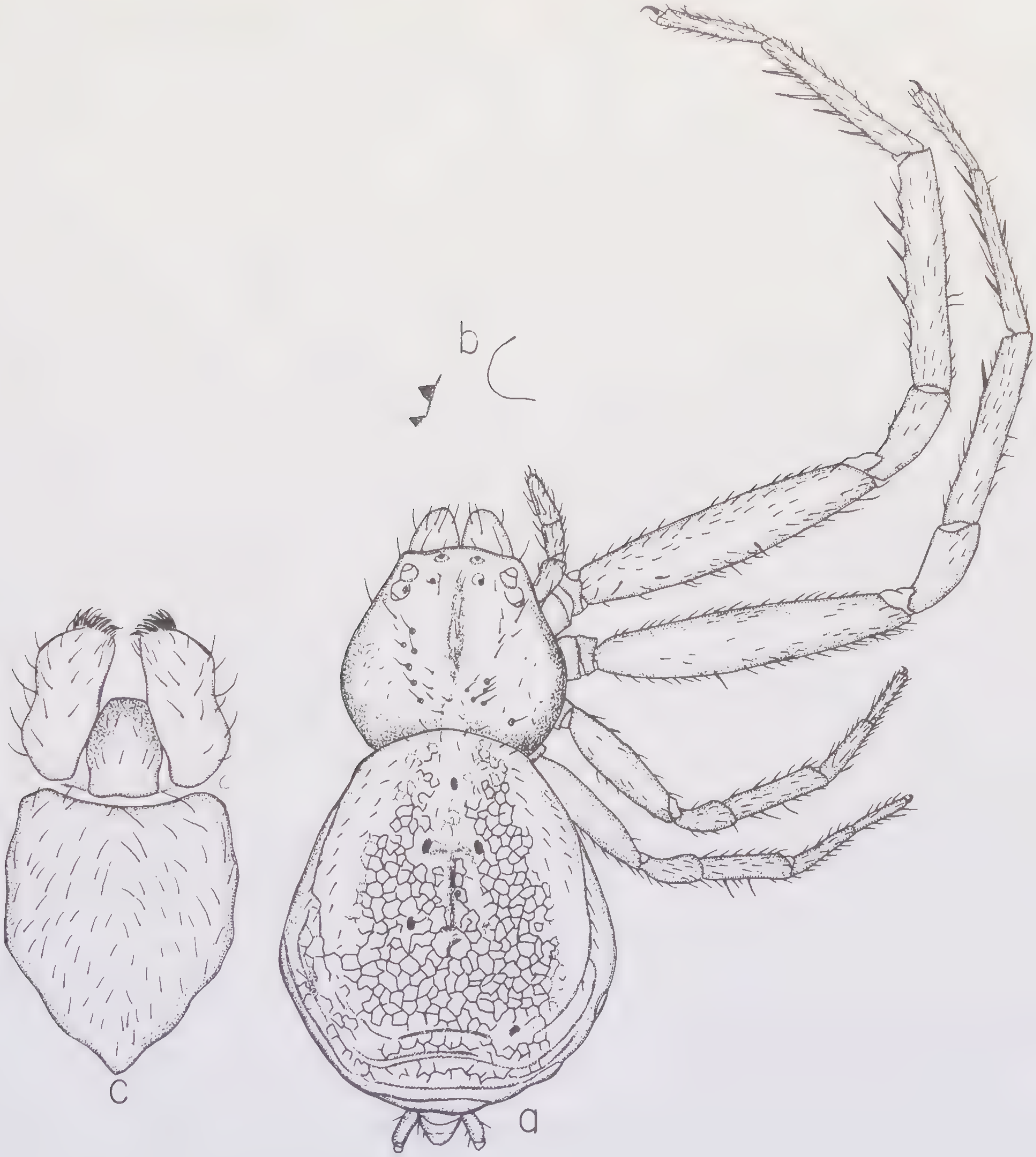

Fig. 141. Female *Misumenoides pabilogus* n. sp. (a); cheliceral teeth (b); and sternum, labium, and maxillae (c).

PE row (1.13 mm). Eye diameter (mm): ALE = 0.08, AME = 0.05, PME = 0.04, PLE = 0.06. Eye separation: AME–AME 3.6 times eye diameter, AME–ALE 4.6 times AME diameter, PME–PME seven times diameter of AME, PME–PLE six times diameter of one AME, PLE–ALE 3.2 or four times diameter of AME or PME, respectively. Median ocular quadrangle wider behind (0.44 mm) than in front (0.31 mm), anterior and posterior widths longer than length. Clypeus height moderately great, 2.6 times AME diameter. Sternum slightly longer than wide, yellow, and setaceous, apical margin white, similar to prolaterals of coxae I and II, posterior end blunt between coxae IV. Labium broadest at midhalf, apically rounded and beyond midlength of longer than wide maxillae. Apices of maxillae subtruncate and outer margin slightly indented at midlength. Chelicerae vertical, yellow with white patches, and frontal spines. Legs I and II much longer than III and IV, uniformly yellow except white spots in coxae I and II, venter of tibia I with six (2-1-2-1) spines and II with four (1-2-1) ventral spines. Metatarsi I and II with 12 (2-2-2-2-2-2) ventral spines each. Tarsi two-clawed, each claw with at least five or six claws in leg I. Leg formula 1243. Pedipalp yellow, as long as combined length of metatarsus and tarsus of leg IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.10	1.80	1.60	1.00	8.00
2	2.20	1.00	1.80	1.50	0.80	7.30
3	1.10	0.50	0.80	0.60	0.55	3.55
4	1.50	0.50	1.00	0.90	0.50	4.40
Pedipalp	0.41	0.25	0.28	-	0.48	1.42

Abdomen white with five brown subglobular spots, three to five U-shaped setaceous ridges running from laterals to posterior one sixth. Venter yellow-brown medially and white laterally. Bases of anterior spinnerets near each other but with separated apices. Posterior spinnerets much more slender and longer than the anterior pair. Median pair parallel to each other, their maximum length less than first segment of anterior spinneret. Colulus broad basally, apex with two setae. Epigynum small, anterior margin sclerotized with a small central hood, intromittent orifice projected toward each other, spermathecal gland very small, located at midanterior margin of subglobular spermathecae.

Etymology: Named after the subglobular abdomen ('pabilog' in Tagalog).

Natural history: Two females were collected from flowers of maize intercropped with upland rice in July.

Material examined: PHILIPPINES: *Mindanao Is.*, Bukidnon, Pangantukan, holotype female, 9 July 1979, A.T. Barrion; paratype female, same data as holotype.

Distribution: Philippines.

Remarks: Paratype female without leg I and right leg II, and has a stouter and wider than long abdomen.

Genus *Misumena* Latreille

Misumena Latreille, 1804. Dict. (Nouveau) Hist. Nat. 24: 135.

Small to medium-sized thomisid, 2.90–10.00 mm long. *Misumena* Latreille comprises approximately 60 described species scattered throughout the world. It closely resembles *Misumenoides* F. Pickard-Cambridge but has no transverse white carina or ridge in front of carapace; carapace moderately low, smooth, and convex along lateral margins and bears few erect setae dorsally; eyes in two transverse recurved rows, PE more recurved than AE row, LE > ME, borne on large confluent tubercles; legs I and II longer and more robust than III and IV, without dorsal spines, with few prolateral spines and several pairs of ventral spines; all legs without scopulae; abdomen broad, moderately flat, yellowish white with median and paired longitudinal bands; male pedipalp with developed RTA and simple VTA; embolus short and twisted, emanating from distal part of tegulum; female epigynum slightly sclerotized, with shallow atrium and small hood, and widely ovoid spermathecae.

Misumena maputiyana new species
(Fig. 142a–e)

Description:

Female: Total length 5.70 mm. Cephalothorax 2.40 mm long, 2.75 mm wide, 1.95 mm high. Abdomen 3.30 mm long, 3.00 mm wide, 2.30 mm high. Cephalothorax wider than long, yellow with white band in ocular area except between PME. Eight eyes in two recurved rows, AE row shorter (1.13 mm) than PE row (1.38 mm). Eye diameter (mm): ALE = 0.15, PLE = 0.13, AME = PME = 0.6. Eye separation: AME–AME 4.8 times eye diameter, AME–ALE 4.2 times AME diameter, PME–PME 7.5 times diameter of AME, PME–PLE 5.8 times diameter of AME, ALE–PLE 2.8 times AME diameter. MOQ much wider behind (0.60 mm) than in front (0.43 mm), length (0.41 mm) slightly shorter than anterior width. Clypeus wide, four times AME diameter, and bears seven setae, one central seta and six along clypeal margins. Sternum, labium, and maxillae uniformly yellow and all longer than wide. Chelicerae flat frontally, white except basal one third. Promargin with two teeth. Legs moderately long, yellow except yellowish brown metatarsi and tarsi. Spination in femora I = 1-0-3-0, II = III = IV = 1-0-0-0; tibiae I = 3-3-0-1, II = 2-2-1-0; metatarsi I = II = 0-9(1-2-2-2-2)-2-1. Tarsi two-clawed, each claw with at least four teeth in leg II and weak claw tuft arranged in two rows underneath the claws. Leg formula 1243. Pedipalp yellow with single claw, shorter than tibia I or II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.20	1.35	2.30	1.75	1.20	9.80
2	3.00	1.25	2.20	1.55	1.10	9.10
3	1.50	0.80	1.20	0.75	0.60	4.85
4	1.80	0.70	1.25	1.00	0.70	5.45
Pedipalp	0.70	0.40	0.45	-	0.60	2.15

Abdomen immaculate white, except yellow tinge along anterior margin, and globular. Venter whitish yellow with a broad median longitudinal yellow band running from epigynum to spinnerets. Anterior spinnerets separated but near each other, brown except tip of basal segment, twice the size of the slender, divergent, and widely spread posterior spinnerets. Outer lateral side of posterior spinnerets brown. Epigynum simple with a broad dome-shaped and slightly sclerotized plate. Spermathecae moderately large and globular.

Etymology: Named after the white abdomen (in Tagalog 'maputi' = white and 'tiyan' = abdomen).

Natural history: All specimens were collected in August from panicles of upland rice except two spiderlings and a paratype female from a flower bud of a wild plant in October.

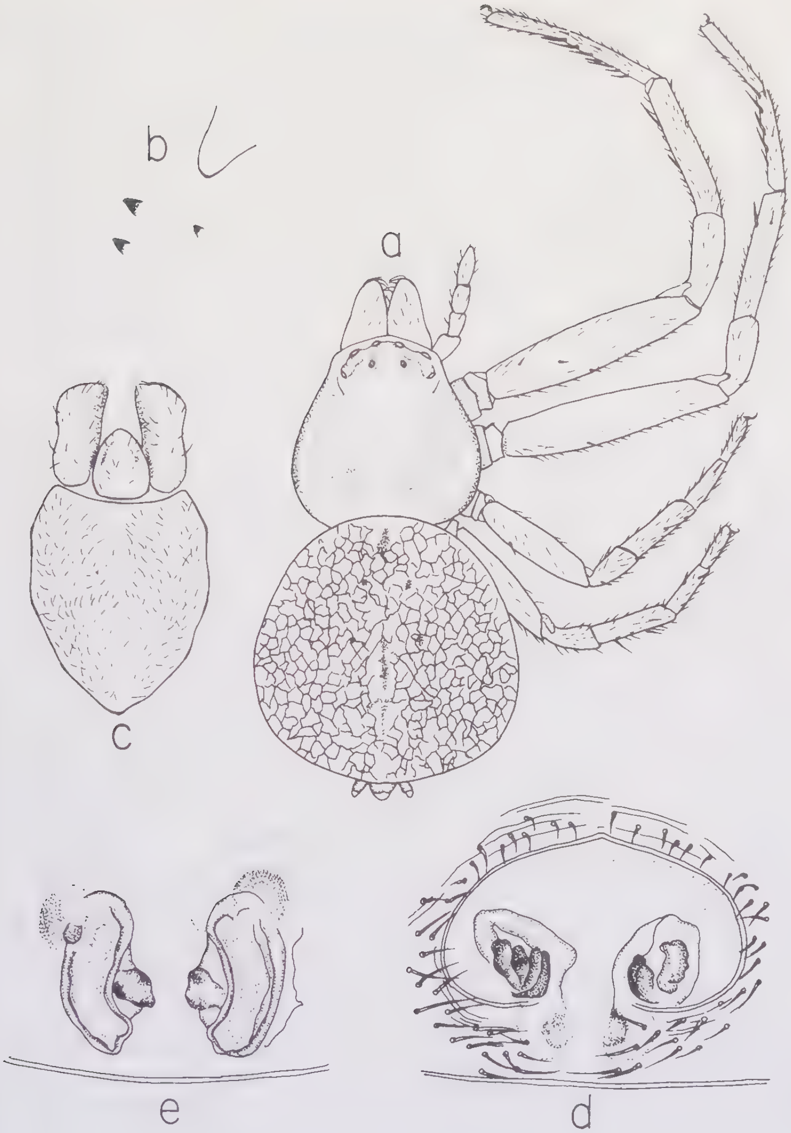

Fig. 142. Female *Misumena maputiyana* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) epigynum.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 16 August 1984, R. Apostol; paratype nine spiderlings (two without abdomen), same data as holotype; Llavac southwest border, paratype one female and two spiderlings, 16 October 1985, A.T. Barrion.

Distribution: Philippines.

Misumena tapyasuka new species
(Fig. 143a–f)

Description:

Female: Total length 4.80 mm. Cephalothorax 2.10 mm long, 2.30 mm wide, 1.30 mm high. Abdomen 2.70 mm long, 2.40 mm wide, 1.40 mm high. Cephalothorax wider than long, yellowish brown with white eye margins, LE tubercle, and anterior of AEs. Dorsum bears a broad inverted U-shaped band with arms, each with a confluent double-convex yellow spot. Eight eyes in two recurved rows, AE shorter than PE row. Eye diameter (mm): ALE = 0.10, PLE = 0.09, AME = PME = 0.06. Eye separation (mm): AME–AME = 0.24, AME–ALE = ALE–PLE = 0.23, PLE–PME = 0.33, PME–PME = 0.36. MOQ wider behind (0.50 mm) than in front (0.38 mm), anterior width equals length. Clypeus height 4.17 times AME diameter. Sternum yellow and finely covered with erect hairs, longer than wide, and heart-shaped, anterior margin concave, anterolateral corner white, lateral margins opposite each coxa straight, posterior end pointed between coxae IV. Labium yellowish brown, longer than wide, slightly constricted in the laterobasal one third and distal margin truncated. Maxillae slender and hirsute, scopulae projected toward each other, outer midlateral margin slightly indented. Chelicerae yellow with long scopulae dorsally and ventrally,

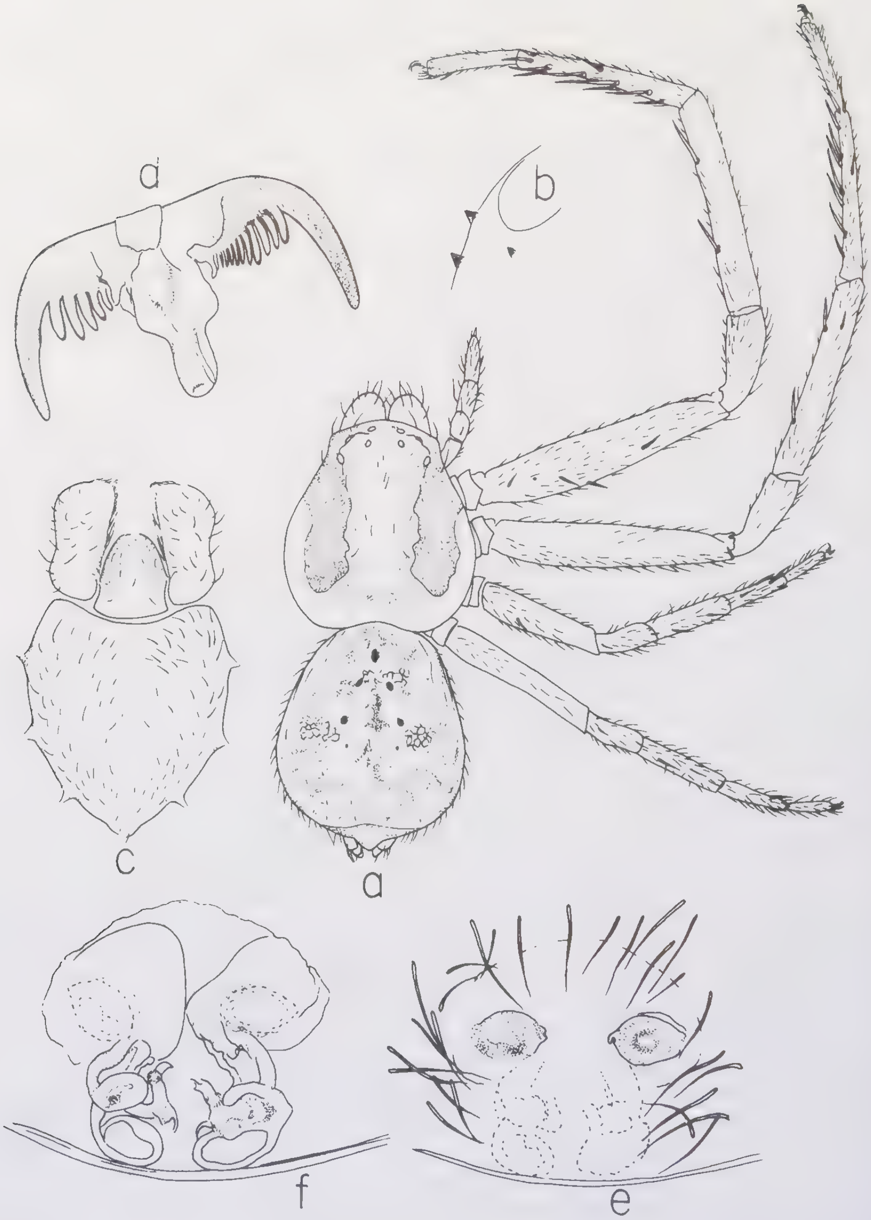

Fig. 143. Female *Misumena tapyasuka* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); tarsal claw (d); and dorsal (e) and ventral (f) epigynum.

promargin with two minute widely spaced teeth and retromargin bears one minute tooth. Legs moderately long and slender with strong ventral spines in legs I and II, uniformly yellow except black claws and apical one third of tarsi I and II. Tibia I has four (two pairs) of ventral spines in the left leg and five (1-2-2) in the right leg, II has the reverse of tibia I, III and IV have one and zero ventral spines, respectively. Metatarsus I has 11 ventral spines, arranged as 2-1-2-2-2-2 on the right and 2-2-2-1-2-2-2 on the left, II has 12 (2-2-3-1-2-2) on the left and 11 (1-2-2-2-2-2) on the right, III and IV have two and one ventral spines, respectively. Tarsi two-clawed with a pair of rows of hairs ventrally, each claw with 6–11 teeth in leg I. Leg formula 1243. Pedipalp yellow with a single claw and almost as long as tibia II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.70	1.20	2.10	1.60	1.00	8.60
2	2.60	1.25	1.95	1.65	1.10	8.55
3	1.30	0.70	1.00	0.70	0.60	4.30
4	1.40	0.60	1.15	0.75	0.65	4.55
Pedipalp	0.60	0.40	0.35	–	0.58	1.93

Abdomen chalk-white, ovate, with striae laterally and seven brown spots dorsally. Venter brown in middle, bordered laterally by a broad white longitudinal band. Anterior spinnerets slightly triangular basally, brown except yellow apical one third of basal segment and yellow apical one half of apical segment. Posterior spinnerets less robust than the anterior pair and yellow-

brown basally. Epigynum with a pair of ovoid transverse orifices high above epigastric furrow, copulatory tube with two loops, and spermathecae kidney-shaped.
Etymology: Named after the highly sloped thorax ('tap-yas' in Tagalog) as viewed laterally and cavities ('uka' in Tagalog) in the apical arm of the band in the thorax.
Natural history: The holotype female was collected by sweep net in August.
Material examined: INDONESIA: Central Java, Magelang, Blabak Vill., holotype female, 24 August 1989, A.T. Barrion.
Distribution: Indonesia.

Misumena menoka Tikader
(Fig. 144a–d)

Misumena menoka Tikader, 1963. Indian Acad. Sci., Bangalore 58(2): 254.

Description:
Female (subadult): Total length 5.05 mm. Cephalothorax 1.45 mm long, 1.50 mm wide, 1.15 mm high. Abdomen 2.60 mm long, 2.70 mm wide, 2.00 mm high. Cephalothorax yellow-brown with a white band between AE and PE eye rows and an inverted U-shaped brown band anchored in eye area, slightly wider than long, poorly haired with a few spines in the head and clypeus. Eight eyes in two recurved rows. AE shorter (0.75 mm) than PE row (0.84 mm). Eye diameter (mm): ALE = 0.10, PLE = 0.08, AME = PME = 0.05. Eye separation (mm): AME–AME = 0.18, AME–ALE = 0.15, PME–PME = 0.25, PME–PLE = 0.23, PLE–ALE = 0.15. MOQ narrower in front (0.28 mm) than behind (0.36 mm), anterior width and length equal. Clypeus wide, 3.2 times AME diameter. Sternum, labium, and maxillae typical of *Misumena* except edges of sternum all white. Chelicerae yellow with a small fang, promargin bears two small teeth, and retromargin has one tooth. Legs yellow with brown bands in apical one half of patellae I and II, posterior and apical one half of tibiae I and II, and apical two thirds of tarsi I and II. Tibiae I and II each with two pairs of ventral spines (left tibia I has five (2-1-2) spines) and one prolateral spine each. Metatarsi I and II each with two prolateral and one retrolateral spines, I with ten ventral spines arranged in five pairs (2-2-2-2-2) on the left and four pairs + one + one (1-2-1-2-2-2) on the right, II with ventral spines each arranged in 1-2-2-2-2. Tm I = 0.86. Tarsi two-clawed, each claw with at least seven teeth. Leg formula 1243. Pedipalp yellow, shorter than femora IV, tarsi single-clawed with five or six teeth, dorsum of tibia with two moderately long trichobothria.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.83	0.78	1.40	1.05	0.79	5.85
2	1.73	0.80	1.03	1.35	0.76	5.67
3	0.90	0.45	0.69	0.43	0.50	2.97
4	1.00	0.46	0.71	0.50	0.51	3.18
Pedipalp	0.39	0.23	0.29	-	0.35	1.26

Abdomen subglobular, chalk-white with five or six broad (in decreasing order posteriorly) transverse brown bands. Venter yellow-brown except whitish lateral margins and portion of epigyne lateral areas. Epigyne simple, without hood, a pair of brown slits present anterior to epigastric furrow. Spinnerets as in *Misumena* except posterior of anterior pair with a brown band.
Natural history: The subadult female was taken from a corn tassel in September.
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Kalingagan Vill., one subadult female, 27 September 1987, A.T. Barrion.
Distribution: India and the Philippines (new record).

Genus *Xysticus* C.L. Koch

Xysticus C.L. Koch, 1835. Fn. Insect. Ger. Init. 129: 16–17.
Xystica Simon, 1864. Hist. Nat. Araign: 247.
Spiracme Menge, 1876. Schr. Naturf. Ges. Danzig. 3: 449.
Psammitis Menge, 1876. Schr. Naturf. Ges. Danzig. 3: 449.
Proxysticus Dalmas, 1922. Ann. Mus. Civ. Stor. Nat. Genova 50: 91.

Xysticus C.L. Koch is the largest genus in the family Thomisidae, comprising about 350 described species distributed in Eurasia, North Africa, and North America. It is a medium-sized thomisid with carapace almost as long as wide, moderately convex and not flattened, wide head with strong setae and thoracic part with short setae; eye diameter: ALE > PLE > AME ⩾ PME, tubercles of ALE and PLE united, eye separation: AME–AME > AME–ALE and PME–PME < than PME–PLE; MOQ wider than long; clypeus height large; chelicerae toothless; sternum and labium longer than wide; legs with strong spines, claw tufts and scopulae less developed; leg formula 1243 or 2143; male pedipalp with VTA and RTA, tegulum simple without apophysis, some groups may bear two or three apophyses; epigynum heavily sclerotized, lacks guide pocket, often with median septum, short intromittent canal present, and large spermathecae, globular to kidney-shaped; abdomen as wide as long in the female, longer than wide in male, often with prominent markings.

Xysticus palawanicus new species
(Fig. 145a–h)

Description:
Male (Fig. 145a–c): Total length 3.03 mm. Cephalothorax 1.48 mm long, 1.33 mm wide, 0.80 mm high. Abdomen 1.55 mm long, 1.25 mm wide, 0.93 mm high. Cephalothorax reddish with white patches in the clypeus, eye area, and base of spines in the thorax, entire dorsum with long erect setae. Eight eyes in two recurved

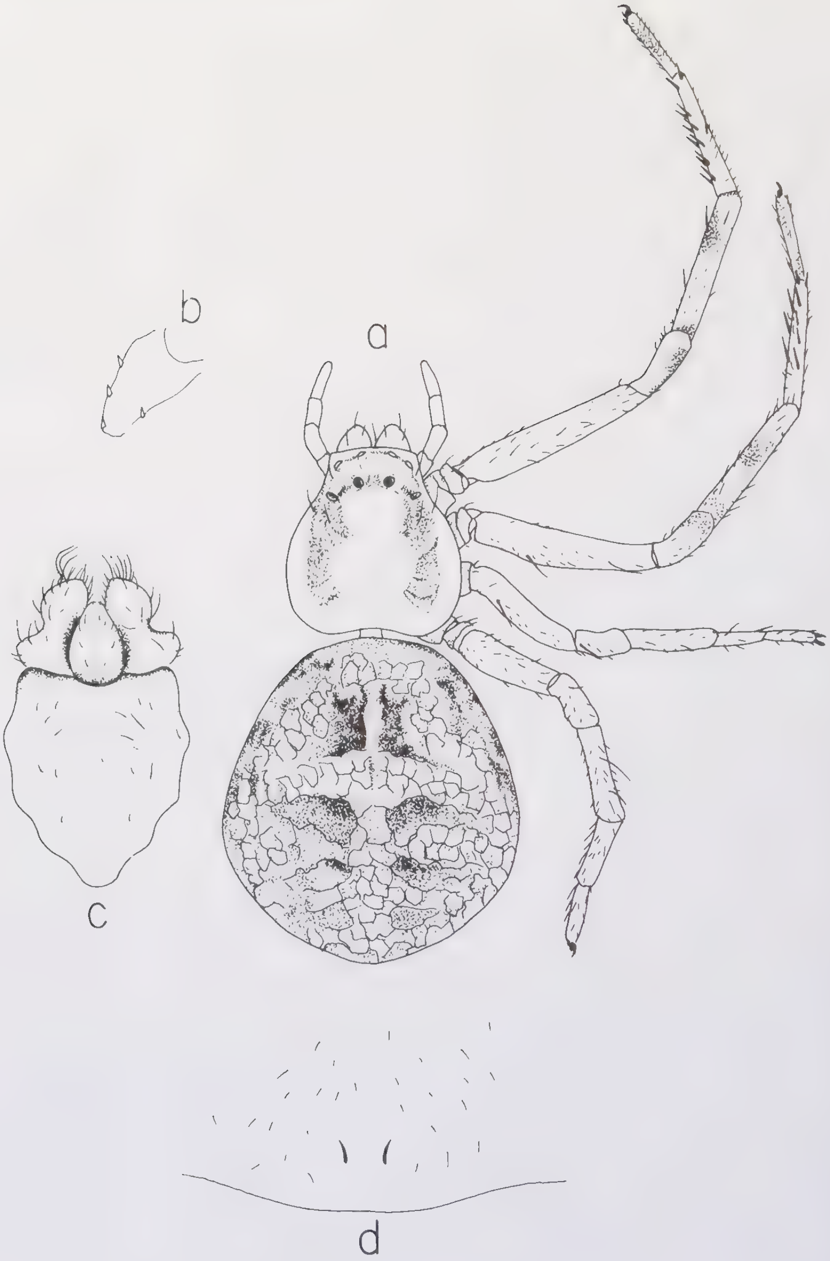

Fig. 144. Female *Misumena menoka* Tikader (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and epigynum (d).

rows, AE row shorter (0.83 mm) than PE row (1.10 mm), LE in distinct non-confluent tubercles, AME–ALE and PME–PLE with a spine each in between. Eye diameter (mm): ALE = 0.16, PLE = 0.15, AME = 0.10, PME = 0.08. Eye separation: AME–AME 1.4 times AME diameter, AME–ALE as long as AME diameter, PME–PME 1.8 times AME diameter, PME–PLE three times AME diameter, ALE–PLE 2.5 times diameter of AME. Median ocular quadrangle narrower in front (0.30 mm) than behind (0.35 mm), both widths shorter than length (0.40 mm). Clypeus height large, 2.8 times diameter of AME. Sternum brown with yellow tinge before shallowly curved lateral margins, apex straight, and posterior end blunt before coxae IV. Labium longer (0.35 mm) than wide (0.23 mm), basal one half reddish and apical one half yellow-brown, apex truncate with brown hairs and beyond midlength of yellow-brown maxillae. Midhalf of outer lateral margin of maxillae indented anterior to palp's coxae and rest of lateral margins reddish brown. Chelicerae moderately flat and with at least four long hairs dorsally, inner and outer margins without teeth. Legs moderately long and slender, yellow to yellow-brown in femora and tarsi, and bearing brown spines. Tibiae I and II spination in left leg = 2-4-3-3 and right leg = 2-6-3-3; tibia III with 2-4-3-3 on both legs and sometimes only one dorsal spine; metatarsi I and II spination = 0-4-1-1 on both legs. Tarsi two-clawed with five or more tenent hairs.

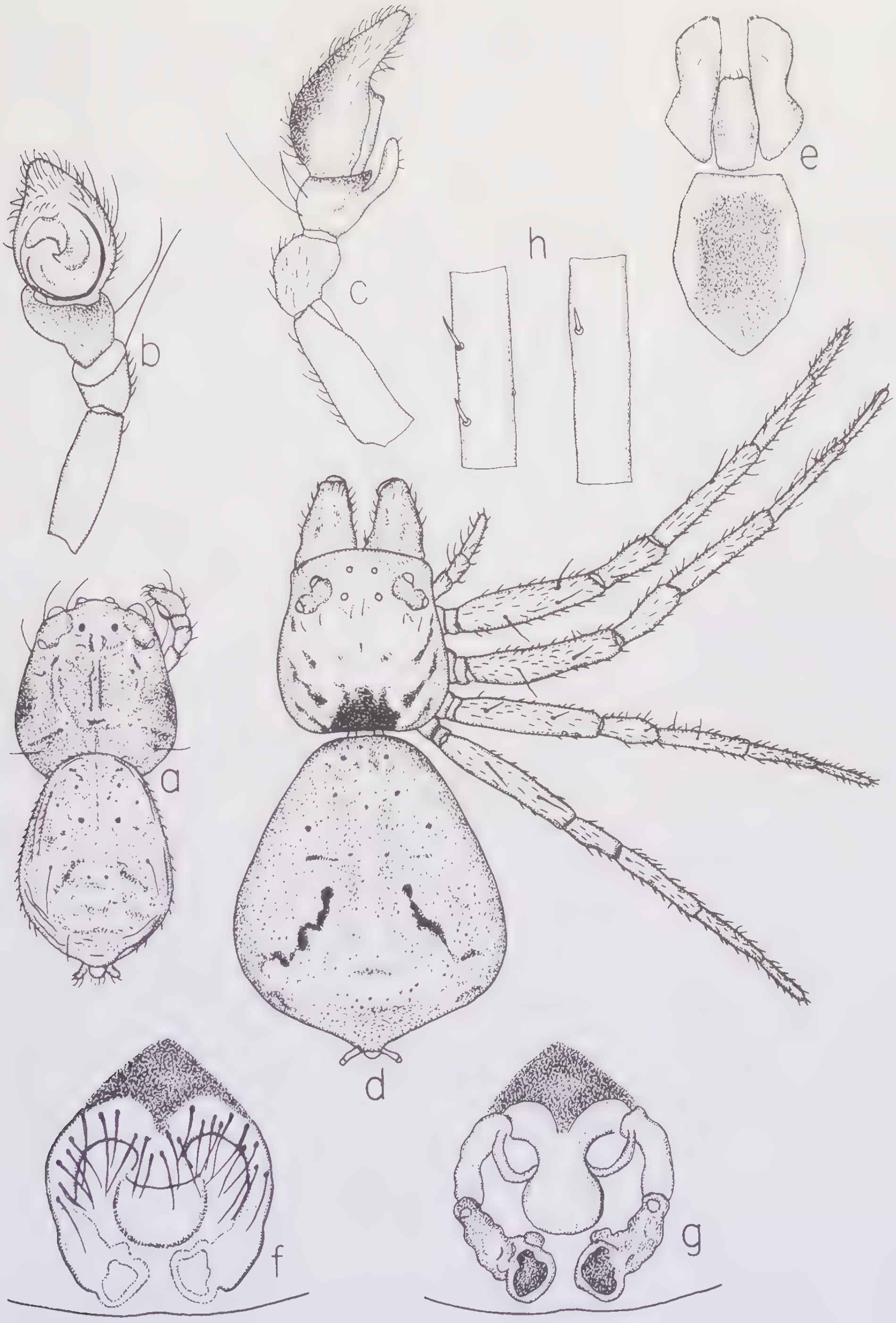

Fig. 145. Male *Xysticus palawanicus* n. sp. (a); ventral (b) and retrolateral (c) views of pedipalp; and female, dorsal view (d); sternum, labium, and maxillae (e); ventral (f) and dorsal (g) views of epigynum; and spination in tibia I (left) and tibia II (right) (h).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.25	0.55	1.15	0.83	0.60	4.38
2	1.33	0.60	1.25	0.90	0.63	4.71
3	0.93	0.40	0.83	0.63	0.41	3.20
4	1.00	0.38	0.78	0.64	0.43	3.23
Pedipalp	0.48	0.23	0.29	-	0.48	1.48

Leg formula 2143. Pedipalp almost as long as combined length of metatarsus and tarsus I, RTA poorly developed, ITA bluntly rounded at tip and curved mesially, and distal tibial apophysis (DTA) subtriangular. Embolus long and circles the tegulum.

Abdomen broadest at posterior one third and triangular posteriorly, chalk-white with brown tinge and spot, midhalf with a pair of spherical sigillae, and entire dorsum with long thin spines. Venter light between epigastric furrow and spinnerets, with 20 circular brown spots arranged ovately, anterior of epigastric furrow gray, laterals of entire abdomen chalk-white with gray to black patches anteriorly and posteriorly. Posterior pair of spinnerets slender and wide apart, anterior pair stout and near each other.

Female (Fig. 145d–h): Total length 4.10 mm. Cephalothorax 1.60 mm long, 1.50 mm wide, 1.55 mm high. Abdomen 2.50 mm long, 2.20 mm wide, 1.50 mm high. Cephalothorax moderately longer than wide, reddish brown with a rough and punctated square-like white band dorsally and enclosed elongated reddish brown patches, white clypeus with very fine hairs, eyes with white rings and on white tubercles, particularly LE. Cephalic area not clearly differentiated from the thoracic area. Eight eyes arranged similarly to males. Eye diameter (mm): ALE = 0.18, PLE = 0.15, AME = 0.10, PME = 0.08. Eye separation (mm): AME–AME 1.9 times AME diameter, AME–ALE 1.3 times AME diameter, PME–PME and PME–PLE 2.5 and 4.3 times diameter of AME, respectively. ALE–PLE 2.6 times AME diameter. Median ocular quadrangle narrower in front (0.35 mm) than behind (0.43 mm), both widths shorter than length (0.45 mm). Clypeus height large, 3.5 times AME diameter. Sternum reddish brown except chalk-white transverse band toward apex, longer (0.80 mm) than wide (0.60 mm), posterior end blunt between coxae IV. Labium reddish except pale brownish yellow distal end, slender and twice longer than broad, reaching 0.80 length of the pale yellow-brown maxillae. Outer lateral margin of maxillae reddish, bulging subapically and slightly concave at midhalf opposite coxae of pedipalp. Chelicerae flat and white with brown patches dorsally, edges and venter reddish brown, promargin and retromargin without teeth, fang small and its sickle arm hardly longer than base of fang. Legs yellow except brownish spines, claws. and hairs. particularly in metatarsi and tarsi. Leg I with two ventroprolateral spines and six (2-2-2) ventral spines in tibia and metatarsus respectively; II has one ventroprolateral tibial spine and six (2-2-2) metatarsal ventral spines. Tarsi two-clawed with tenent hairs, each claw with 8–11 teeth. Leg formula 2143. Pedipalp yellow except brown tarsi, almost as long as combined length of tibia III and metatarsi III.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.23	0.60	1.05	0.80	0.58	4.26
2	1.30	0.65	1.10	0.85	0.60	4.50
3	0.93	0.55	0.75	0.65	0.45	3.33
4	1.15	0.43	0.90	0.73	0.50	3.71
Pedipalp	0.50	0.25	0.40	–	0.53	1.68

Abdomen white except for about ten small, spherical brown spots, a pair of globular brown sigilla, and inverted Y-shaped brownish gray band with the apex of band almost connected by a transverse thin gray band, posterior one third of abdomen broadest and tapers to the anal tubercle. Laterals of the abdomen white with brown to gray mottlers. Venter gray-brown medially except white lateral margins with gray tinges and yellow subspherical book lungs. Anterior spinnerets short, moderately robust, and slightly nearer each other compared to the slender and more widely separated posterior pair. Epigynum bears a pair of small globular orifices with a circular hood connected to it dorsally and a yellow band in each lateral epigyral margin.

Etymology: Named after type locality.

Natural history: All specimens were D-Vac suction collected from an abandoned ricefield in September dominated by *Echinochloa* and *Cyperus*.

Material examined: PHILIPPINES: Palawan Is., Palawan Prov., Aborlan, Cabigaan Vill., holotype male, 25 September 1987, A.T. Barrion, paratypes, five females and three males, same data on holotype.

Distribution: Philippines.

Genus *Diaea* Thorell

Diana Simon, 1864. Hist. Nat. Araign. (Araneides): 432 (preoccupied by *Diana* Risso, 1826; Pisc.).

Diaea Thorell, 1869. Nova Acta Reg. Soc. Sci. Uppsal. 3(7): 37.

Medium-sized thomisids represented by some 80 described species, most of which are from Australia and the Pacific Islands. Members of the genus have slightly longer than wide cephalothorax with long setae; eyes prominent with tubercles of LE developed and confluent; eye diameter: ALE > PLE > AME > PME; eye separation: AME–AME > AME–ALE, PME–PME < PME–PLE; MOQ longer than wide, wider behind than in front; clypeus height as large as to slightly larger than AME–AME separation; labium and sternum both longer than wide; chelicerae without teeth; leg formula 1243, spines well developed; pedipalp of male with VTA, ITA, and RTA; RTA bears a distal tooth; simple bulb without apophysis; embolic division long; female epigynum with a guide pocket borne on a soft median protuberance; intromittent canal long and winding; spermathecae small and ovoid to globular; abdomen ovoid, longer than wide and lined with strong hairs.

Diaea carangali new species

(Fig. 146a–h)

Description:

Female: Total length 2.80 mm. Cephalothorax 1.30 mm long, 1.30 mm wide, 0.80 mm high. Abdomen 1.50 mm long, 1.50 mm wide, 1.00 mm high. Cephalothorax brown with a yellow band in the foveal area and black bases of eyes. Posterior of PE with ten long setae arranged in three (3-3-4) recurved rows. Eight eyes in two recurved rows with AE slightly shorter than PE row. LE on tubercles touching but separate from each other. Eye diameter (mm): ALE = 0.10, PLE = 0.08, AME = PME = 0.05. Eye separation (mm): AME–AME = AME–ALE = 0.10, PME–PME = 0.13, PME–PLE = 0.18, PME–ALE = 0.15, PLE–ALE = 0.18. MOQ

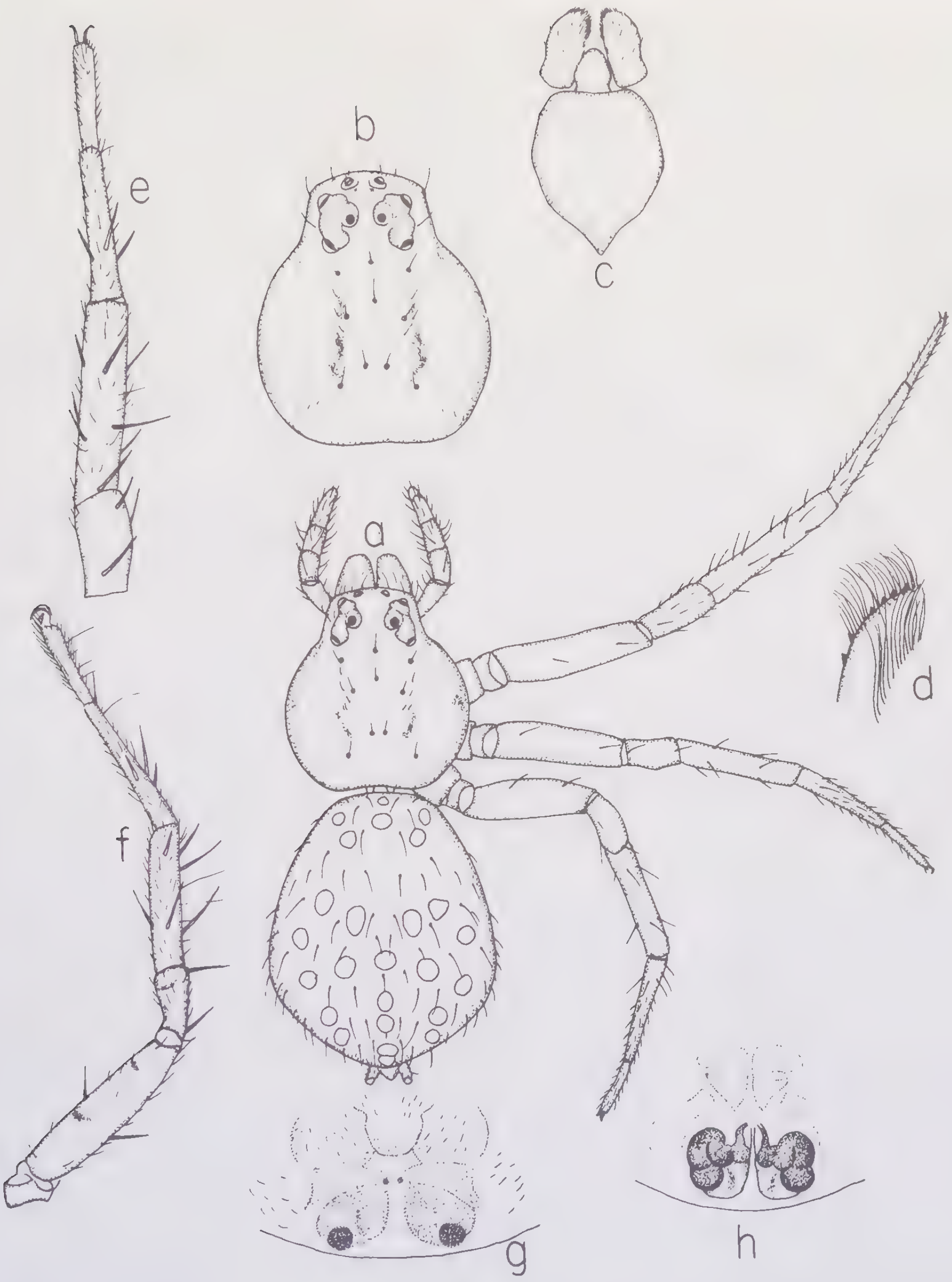

Fig. 146. Female *Diaea carangali* n. sp. (a); carapace (b); sternum, labium, and maxillae (c); cheliceral teeth (d); leg III without femur (e); leg IV (f); and dorsal (g) and ventral (h) views of epigynum.

wider behind (0.25 mm) than in front (0.18 mm); posterior width shorter than height (0.30 mm). Clypeus height large, 2.8 times AME diameter. Sternum yellow, longer than wide, anterior end concave and posterior tip rounded. Labium longer than wide, yellow-brown with yellowish truncate apex. Maxillae yellow, longer than wide, outer lateral midhalf not constricted for the base of pedipalp. Chelicerae yellow, vertical, and retromargin without teeth, and promargin has six teeth covered with scopulae, the first set of four separated from the basal two teeth; legs moderately short, yellow, and spinous, femora with two ring bands and ventral spines, tibia II with eight (2-2-2-2) ventral spines, III and IV with one each; metatarsus II with six (2-2-2) ventral spines; dorsal spines strong, with three in tibia II, and one each in tibiae III and IV and metatarsi II–IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	–	–	–	–	–	–
2	1.40	0.50	1.10	1.00	0.60	4.60
3	0.88	0.30	0.85	0.60	0.40	3.03
4	0.90	0.32	0.80	0.65	0.45	3.12
Pedipalp	0.38	0.20	0.20	–	0.42	1.20

Abdomen yellow with chalk-white spots, spinous, subglobular, and spinnerets only partially visible dorsally. Epigynum simple, anterior portion with a truncate tongue-like structure dorsad of the small orifices close to the epigastric furrow.

Etymology: Named after Dr V. Carangal, a colleague of Dr J. Litsinger in Cropping Systems.

Natural history: The only female specimen, without leg I (right and left), left leg II and right leg IV, was taken from a yellow pan trap set in the middle of upland dibbled rice in June.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 6 June 1985, R. Apostol and A. Barrion.

Distribution: Philippines.

Diaea tadtadtinika new species

(Fig. 147a–e)

Description:

Female: Total length 2.85 mm. Cephalothorax 1.10 mm long, 1.20 mm wide, 0.78 mm high. Abdomen 1.75 mm long, 1.35 mm wide, 1.18 mm high. Cephalothorax yellowish brown, spinous in the cephalic and smooth in the thoracic area, posteriormost part of cephalic area with a pale yellow V-shaped band and a broad brown band on each side parallel to the arm of the V-band. Eight eyes in two recurved rows, each with black rings, and a pair of moderately long hairs between ALE and ALE–PLE–PME. Eye diameter (mm): ALE = 0.11, PLE = 0.06, AME = PME = 0.05. Eye separation: AME–AME twice eye diameter, AME–ALE 2.6 times AME diameter, PME–PME = AME–ALE three times one AME diameter, ALE–PLE 3.2 times AME diameter. Lateral eyes on separate small tubercles. Median ocular quadrangle one third wider behind (0.30 mm) than in front (0.20 mm), anterior width shorter than length (0.23 mm). Clypeus broad, vertical band from ALE to near base of chelicerae. Sternum yellow, longer (0.63 mm) than wide (0.58 mm), posterior end blunt between coxae IV. Labium yellow, longer than wide, with truncate apex. Maxillae yellow and moderately convergent distally. Chelicerae yellow with brown spots frontobasally and bearing no teeth. Legs yellow to pale yellow-brown with strong spines. Spination: femora I = 2-8-3-0, II = 2-7-0-0, ventral spines thin and small; tibiae I = II = 3-8(2-2-2-2)-3-3; metatarsi I = II = 1-6(2-2-2)-2-2. Tibiae I and II each with one long and two or three short trichobothria middorsally. Tm I at longest subapical trichobothrium = 0.94. Tarsi with two long median and subapical trichobothria dorsally. Tarsi two-clawed, each claw with three teeth, apical teeth the longest. Leg formula 1243. Pedipalp longer than tibia I or II, bears a single claw with two teeth.

Abdomen yellow, globular, and spinous dorsally, bases of spine pale gray; venter of abdomen yellow without spines. Posterior spinnerets stouter than the anterior pair, dorsal of basal segment with gray bands. Epigynum with a truncated central hood, intromittent canal moderately long, spermathecae subglobular.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.30	0.50	1.00	0.96	0.55	4.31
2	1.23	0.46	1.03	1.00	0.50	4.22
3	0.80	0.38	0.73	0.55	0.40	2.86
4	1.05	0.35	0.75	0.70	0.38	3.23
Pedipalp	0.33	0.20	0.21	–	0.39	1.13

Etymology: Derived from spinous pattern of the species (in Tagalog 'tadtad' = with numerous; 'tinik' = spines).

Natural history: Collected by D-Vac suction machine from hilly grasslands of *Themeda* and *Imperata* in August and October.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Barangay Uno Vill., holotype female, 18 August 1985, M. Perez; paratype one female and one spiderling from Quezon Prov., Real, Llavac Vill., 16 October 1985, A.T. Barrion.

Distribution: Philippines.

Genus *Synaema* Simon

Synema Simon, 1864. Hist. Nat. Araign. (Araneides): 433 (mistransliteration from Greek).

Synaema Thorell, 1869. Nova Acta Reg. Soc. Sci. Uppsal. 3(7): 36.

Synaema Simon is cosmopolitan in distribution but common in temperate and tropical zones. It contains approximately 130 described species in the world. Members of the genus are medium-sized thomisids; carapace with long setae, almost as long as wide; small eyes with eye diameter ALE > PLE > AME > PME; LE on separate tubercles; MOQ wider than long; sternum and labium both longer than wide; legs with strong spines and claw tufts poorly developed; leg formula 2143; female pedipalp bears a dentate claw; male pedipalp with VTA and RTA, occasionally with ITA, RTA simple and poorly developed; bulb simple, without apophysis; long embolus, filiform; female epigynum with a sclerotized median plate, median hood present beneath the plate; soft intromittent canal distinct; small spermathecae, reniform or kidney-shaped; abdomen globular in female and ovoid in male; long hairs present in both sexes and abdominal dorsum with or without markings.

Synaema globosum (Fabricius)

(Fig. 148a–c)

Aranea globosa Fabricius, 1775. Syst. Ent.: 432.

A. platigera Rossi, 1790. Fn. Etrusc. 2: 134.

A. rotundata Walckenaer, 1802, Fn. Paris Ins. 2: 231.

Thomisus rotundatus Walckenser, 1805. Tabl. Aran.: 30.

T. globosus Latreille, 1830. Dic. Clas. Hist. Nat. Paris: 232.

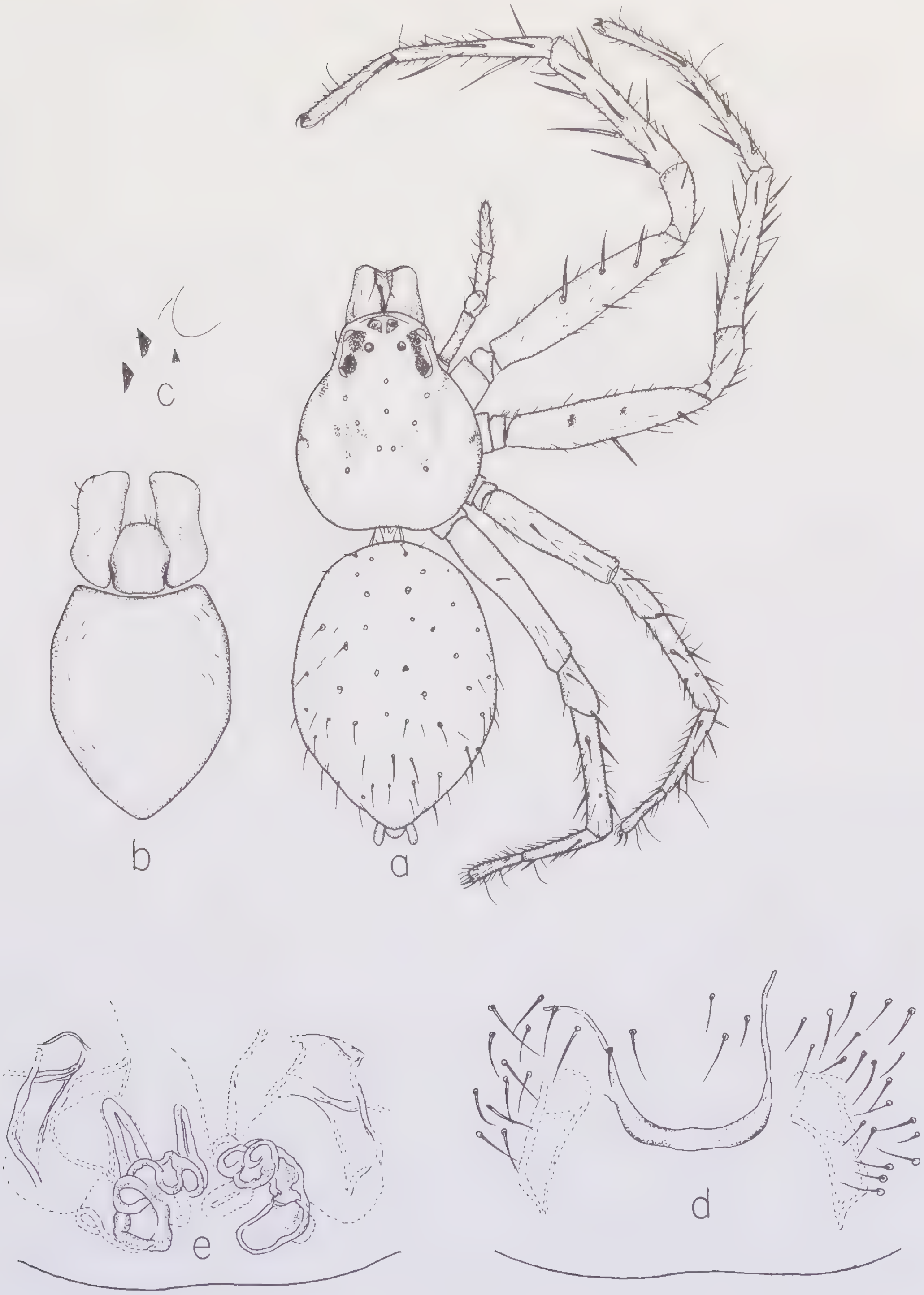

Fig. 147. Female *Diaea tadtadtinika* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and dorsal (d) and ventral (e) views of epigynum.

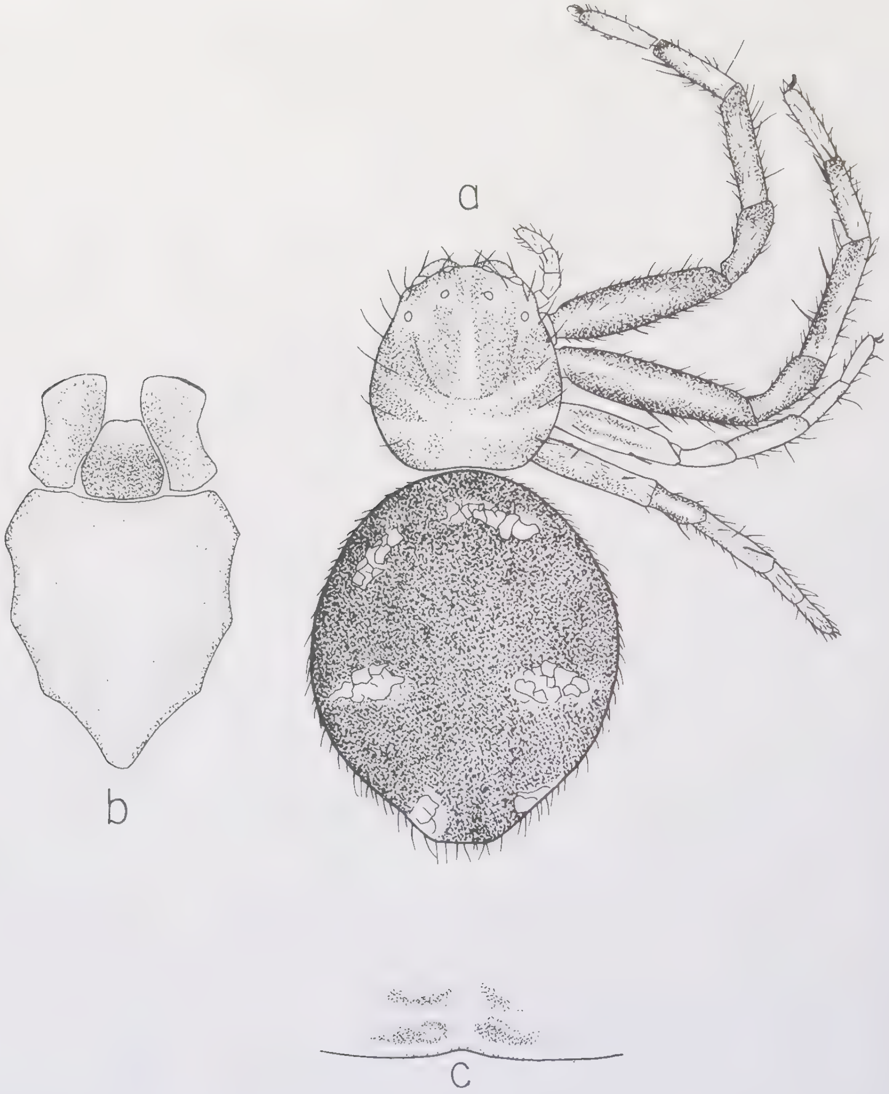

Fig. 148. Subadult female of *Synaema globosum* (Fabricius) (a); sternum, labium, and maxillae (b); and epigynal mark (c).

Synema rotundata Simon, 1864. Hist. Nat. Araign.: 433, 527.
Xysticus globosus Mocsary, 1872. Math. Termes. Kozlem., Budapest 10: 198.
Diaea globosa Thorell, 1873. Remarks Syn. Eur. Spid.: 542.
Synema globosa Simon, 1875. Arachn. France 2: 202.
Synema globosum Pavesi, 1875. Atti. Soc. Ital. Sci. Nat. 18: 277.
Synaema globosum Simon, 1875. Ann. Soc. Ent. France 5: 5.
Diaea nitida L. Koch, 1878. Verh. Zool.-Bot. Ges. Wien 27: 769.
Synema japonica Karsch, 1879. Verh. Naturf. Ver. Preuss. Rheinl. Westfalens 36: 75.
Diaea kochi Thorell, 1881. Ann. Mus. Civ. Stor. Nat. Genova 17: 340.
Synaema globosa Fuente, 1898. An. Soc. Esp. Hist. Nat. 27, Actas: 99.
S. globosum var. *nigniventris* Kulezynski, 1901. In Horvath, Zool. Ergeb. Asiat. Forsch.-Reise Eugen Zichy 1: 317.
S. japonica Boesenberg and Strand, 1906. Abh. Senckenb. Naturf. Ges. 30: 265.
S. (Synaema) globosum Dahl, 1907. Mitt. Zool. Mus. Berlin 3: 378.
S. g. japonicum Dahl, 1907. Mitt. Zool. Mus. Berlin 3: 378.
S. g. canariense Dahl, 1907. Mitt. Zool. Mus. Berlin 3: 378.
Synema globosa var. *clara* Franganillo-Balboa, 1913. Broteria, Lisboa 11: 132.
Synema globosa var. *flava* Franganillo-Balboa, 1913. Broteria, Lisboa 11: 132.
Synema globosa var. *pulchella* Franganillo-Balboa, 1925. Bol. Sco. Ent. Esp. 8: 38.
Synaema globosa japonica Kishida, 1928. Fuji No Kenkyu 6: 480.

Diaea nitidula Mello-Leitao, 1929. Arch. Mus. Nac. Rio de Janeiro 31: 294.
Synaema japonicum Utochkin, 1960. Zool. Zhun. 39: 1019.
S. japonicum daghestanicum Utochkin, 1960. Zool. Zhun. 39: 1019.
Synaea japonicum Song, 1987. Spid. Agr. Regions China: 268.

Description:
Immature female: Total length 2.17 mm. Cephalothorax 0.79 mm long, 0.78 mm wide, 0.53 mm high. Abdomen 1.38 mm long, 1.28 mm wide, 0.65 mm high. Cephalothorax black to dark reddish brown, almost as wide (0.78 mm) as long (0.79 mm), moderately hairy with moderately strong setae in the cephalic area and clypeus. Eight eyes in two recurved rows, AE shorter but more recurved than PE row. Eye diameter (mm): ALE = 0.13, AME = 0.09, PLE = 0.08, PME = 0.05. Eye separation: AME–AME 2.3 times eye diameter, AME–ALE 1.2 times diameter of AME, PME–PME = PME–PLE five times AME diameter, ALE–PLE equal to diameter of ALE. Median ocular quadrangle much wider behind (0.36 mm) than in front (0.33 mm), both widths more than length (0.30 mm). Clypeus height small, approximately one half AME diameter. Sternum heart-shaped, dark or blackish brown, a little longer than wide, anterior margin slightly concave and posterior end blunt between coxae IV. Labium and maxillae same color as sternum, apices of both structures truncate. Chelicerae vertical without teeth, black to reddish brown with a small fang. Legs moderately long except III and IV, black with yellow legs III and IV, tarsi I and II, parts of metatarsi, and tibiae I and II. Tibiae I and II each with an erect dorsal seta in the basal one fourth and five (1-2-2) ventral spines. Metatarsi I and II with similar spination: 1-2-1-1. Metatarsal dorsal spine slender and weak. Tm I at longest trichobothrium equals 0.83. Tarsi two-clawed, each claw with numerous (more than 11) comb-like teeth in legs I and II. Leg formula 2143. Pedipalp yellowish brown with a black ventral band in tibia and apical rim of patella, a little longer than femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.90	0.50	0.71	0.58	0.53	3.22
2	1.00	0.53	0.80	0.58	0.50	3.41
3	0.75	0.35	0.50	0.30	0.36	2.26
4	0.73	0.33	0.58	0.38	0.40	2.42
Pedipalp	0.30	0.16	0.18	–	0.30	0.94

Abdomen black and globular with eight elongate white bands, one pair each in the anterior margin and median area, and two pairs in the posterior lateral margins. Venter uniformly black, including spinnerets.
Natural history: The only specimen was observed feeding on jumping lice, *Heteropsylla cubana* Crawford, infesting *Leucaena* in December.
Material examined: PHILIPPINES: *Leyte Is.*, Baybay, Visca area, one young female, 28 December 1986, B. Balmocena.
Distribution: Middle part of Eurasia from Spain to Japan, and the Philippines (new record).

Synaema batarasa new species
(Fig. 149a–d)

Description:
Male: Total length 2.63 mm. Cephalothorax 1.25 mm long, 1.25 mm wide, 0.93 mm high. Abdomen 1.38 mm long, 1.05 mm wide, 0.65 mm high. Cephalothorax orange-red, convex and gradually sloping posterior to fovea, thoracic area bears three pairs of long setae and one moderately long seta, each posterior to PLE. Eight eyes in two recurved rows, AE row slightly longer than PE row (0.88 : 0.85 mm). Eye diameter (mm): ALE = 0.13, PLE = 0.08, AME = 0.06, PME = 0.05. Eye separation: AME–AME 3.33 times eye diameter, AME–ALE three times AME diameter, PME–PME five times PME or 4.2 times AME diameter, PME–PLE 4.66 times diameter of AME, PLE–ALE 1.66 times AME diameter. Median ocular quadrangle only slightly narrower in front (0.32 mm) than behind (0.33 mm), anterior and posterior widths greater than length (0.25 mm). Clypeus height moderately large, as long as PLE–ALE separation. Sternum hirsute, yellow-brown, longer than wide, anterior margin concave to accommodate the brown longer than wide labium. Maxillae nearly truncate apically, longer than wide, outer lateral margin moderately concave opposite palp's coxae. Chelicerae same color as sternum, without retromarginal tooth, and possessing small fang. Legs moderately long and armed with few spines, yellowish brown from coxae to patellae and dark brown from tibiae to tarsi. Leg formula undetermined, leg I and right leg II missing. Femora I–IV each with four dorsal spines, tibia II spination = 2-4-2-2. Tarsi two-clawed with poorly developed claw tufts but almost twice longer than length of each claw. Pedipalp yellow, slightly longer than metatarsi II, tibia with three long prolateral and one dorsal setae and six or seven trichobothria. RTA acutely pointed and sclerotized. VTA blunt apically and moderately curved. ITA absent. Embolus long and filiform, circling the tegulum, without apophysis. Cymbium brown with moderately thick hairs at its apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	–	–	–	–	–	–
2	1.30	0.45	1.13	0.90	0.58	4.36
3	0.75	0.28	0.60	0.41	0.35	2.39
4	0.83	0.23	0.50	0.48	0.36	2.40
Pedipalp	0.30	0.18	0.19	–	0.33	1.00

Abdomen yellow in the apical one half and black in the posterior one half, ovoid and almost smooth dorsally. Anal tubercle yellowish brown and with three or

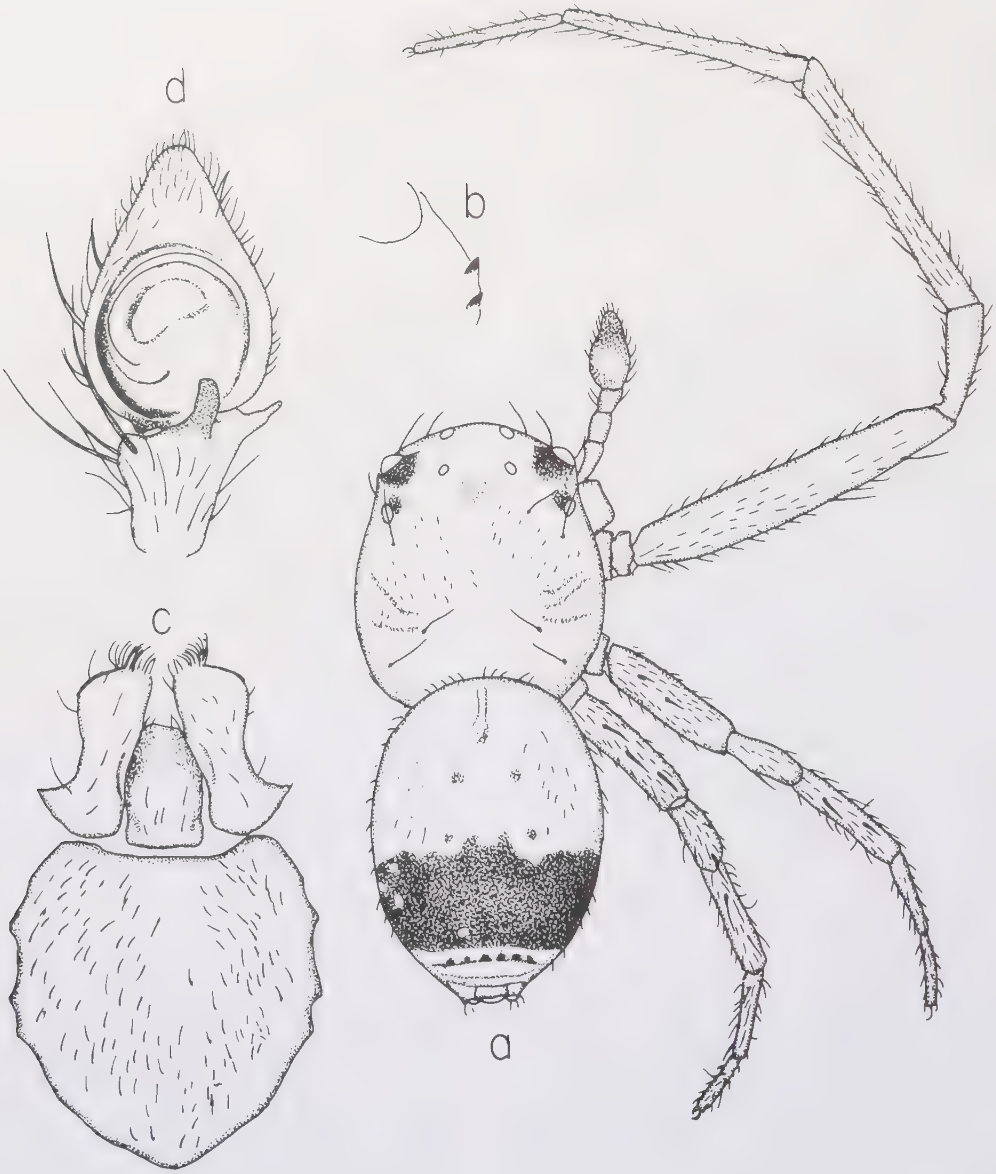

Fig. 149. Male *Synaema batarasa* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

four black transverse striae interspersed with yellow anterior of anal tubercle. Venter yellow except yellow brown area dorsal to epigastric furrow. Anterior spinnerets nearly twice diameter of each of the posterior pair, almost contiguous except small basal separation.
Etymology: Named after type locality.
Natural history: One male was collected from KLT set in the middle of a ricefield in September.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Batarasa, holotype male, 25 September 1987, A.T. Barrion.
Distribution: Palawan.

Genus *Lysiteles* Simon

Lysiteles Simon, 1895. Hist. Nat. Araign., ed. 2, 1: 998.
Diaea Yaginuma, 1960. Spiders Japan Col., Osaka: 98 (*partim*).
Synaema Yaginuma, 1968. Spiders Japan Col., Osaka (rev. ed.): 98 (*partim*).

Small sized thomisids with cephalothorax longer than wide, high and bearing long setae; developed eyes in two rows with PE more recurved and longer than AE row, diameter in decreasing order ALE > PLE > AME ⩾

PME; median ocular quadrangle wider than long and narrower in front than behind; clypeus height large, as long as or wider than AME–AME separation; sternum heart-shaped, longer than wide and occasionally as long as wide; labium longer than wide; chelicerae with two promarginal teeth and zero or one weak retromarginal tooth; leg formula 2143 or 1243, spines strong, tarsal claw tufts weakly developed; abdomen longer than wide, with dorsal markings; RTA and VTA present in male's pedipalp, RTA strongly sclerotized, apophysis absent in the bulb, short, thick, and twisted embolus present; epigynum of the female bears a sclerotized fold housing the intromittent orifices; and spermathecae subglobular.

Lysiteles umalii new species

(Fig. 150a–i)

Description:
Female: Total length 4.70 mm. Cephalothorax 1.65 mm long, 1.40 mm wide, 1.20 mm high. Abdomen 2.45 mm long, 1.70 mm wide, 1.35 mm high. Cephalothorax longer than wide, highest at midlength, yellowish brown with a pair of broad longitudinal reddish brown bands dorsally but aborted posteriorly. Eight eyes, all clear, with broad black margins except black PME. Both eye rows strongly recurved, AE row only slightly longer than PE row. Area between ALE and PLE each with a long curved seta and a thin and shorter one basal to it. Posterior of PLE each with a long erect seta within the broad band. Eye diameter (mm): ALE = 0.20, PLE = 0.15, AME = 0.08, PME = 0.04. Eye separation: AME–AME = AME–ALE 2.5 times AME diameter, PME–PME 4.13 times AME diameter, PME–PLE 4.4 times diameter of AME. Median ocular quadrangle with equally long anterior and posterior widths (0.40 mm), 1.7 times longer than length. Clypeus height large, 2.5 times AME diameter or equal to PLE diameter. Sternum yellow-brown, heart-shaped, anterior margin concave, apical one half of lateral margin dark brown, and posterior end bluntly rounded between coxae IV. Labium brown, longer than wide but widest at midlength and beyond midlength of maxilla. Yellow-brown maxilla concave at midlength and slightly black in the apical one half of the retrolateral. Chelicerae reddish brown and small but stout basally. Promargin bears two teeth and retromargin one. Legs relatively long and slender, brown-yellow except dark brown claws. Spination in femora I = 2-0-3-0, II = III = IV = 2-0-0-0; tibiae I = 1-8(2-2-2-2)-3-3, II = 2-8(2-2-2-2)-3-3, III = IV = 0-4-2-2; metatarsi I = 0-6(2-2-2)-2-2; III = IV = 0-1-2-2. Subapex of tarsi two-clawed and metatarsi I with the longest trichobothrium, Tm I = 0.90. Middorsal of tarsi I with the longest trichobothrium, tarsus a/b = 0.51, each claw has a row of 12 or more teeth with their tips in a straight line. Leg formula 2143 (note: based on combined length of femur to tibia only as leg II has metatarsus and tarsus missing).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.55	0.65	1.55	1.33	0.75	5.83
2	1.60	0.68	1.58	–	–	3.86
3	1.00	0.45	0.83	0.55	0.53	3.36
4	1.10	0.43	0.83	0.60	0.50	3.46
Pedipalp	0.48	0.20	0.28	–	0.45	1.41

Abdomen dirty white except for a pair of broad black longitudinal bands dorsally, oblongate, and twice longer than wide. Anterior margin rounded and projected slightly forward. Laterals bear a W-shaped grayish brown band with its posterior end connected to the posterior end of the dorsal band. Venter uniformly pale yellow. Epigynum brown with a transversely elongate median opening. Spermathecae with broadly hook-like and converging apex, basal part subglobular and far from the epigynal fold. Fertilization tube located almost in between the apex and base of spermathecae.
Male: Total length 3.10 mm. Cephalothorax 1.50 mm long, 1.25 mm wide, 0.90 mm high. Abdomen 1.60 mm long, 1.00 mm wide, 1.20 mm high. Cephalothorax with coloration similar to female except for the dark red-brown dorsum and yellow-brown area below the band. Eyes in two rows of four each, AE row less recurved than the PE row. Eye diameter (mm): ALE = 0.14, PLE = 0.11, AME = 0.08, PME = 0.03. Eye separation: AME–AME 2.25 times eye diameter, AME–ALE 2.38 times AME diameter, PME–PME 3.5 times AME or 9.33 times PME diameter, PME–PLE three times AME diameter, ALE–PLE 2.5 times AME diameter. Median ocular quadrangle slightly wider behind (0.35 mm) than in front (0.33 mm), both widths longer than length (0.30 mm). Clypeus height large, 1.75 times AME diameter. Sternum, labium, and maxillae similar to female in color and shape. Legs relatively long and slender like the female. Leg formula 2143. Pedipalp yellow-brown with black embolus and tip of retrolateral tibial apophysis (RTA). RTA pointed apically but projected slightly towards lateral, ventral tibial apophysis hooked at tip and shorter than the RTA. Cymbium subglobular with black moderately long embolus, embolus and reservoir occupy nearly the entire inside of cymbium.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.60	1.70	1.45	0.95	6.20
2	1.70	0.55	1.80	1.50	0.90	6.45
3	1.00	0.40	1.00	0.70	0.50	3.60
4	1.10	0.40	0.90	0.50	0.50	3.70
Pedipalp	0.45	0.20	0.23	–	0.55	1.43

Abdomen similar to the female except in size and narrower bands.
Etymology: Dedicated to Dr Dioscoro Umali for his stewardship of the UP Los Baños College of Agriculture.
Natural history: Four adults (one female/three males) were all taken from yellow pan trap set along the border of slash-and-burn upland rice in August.

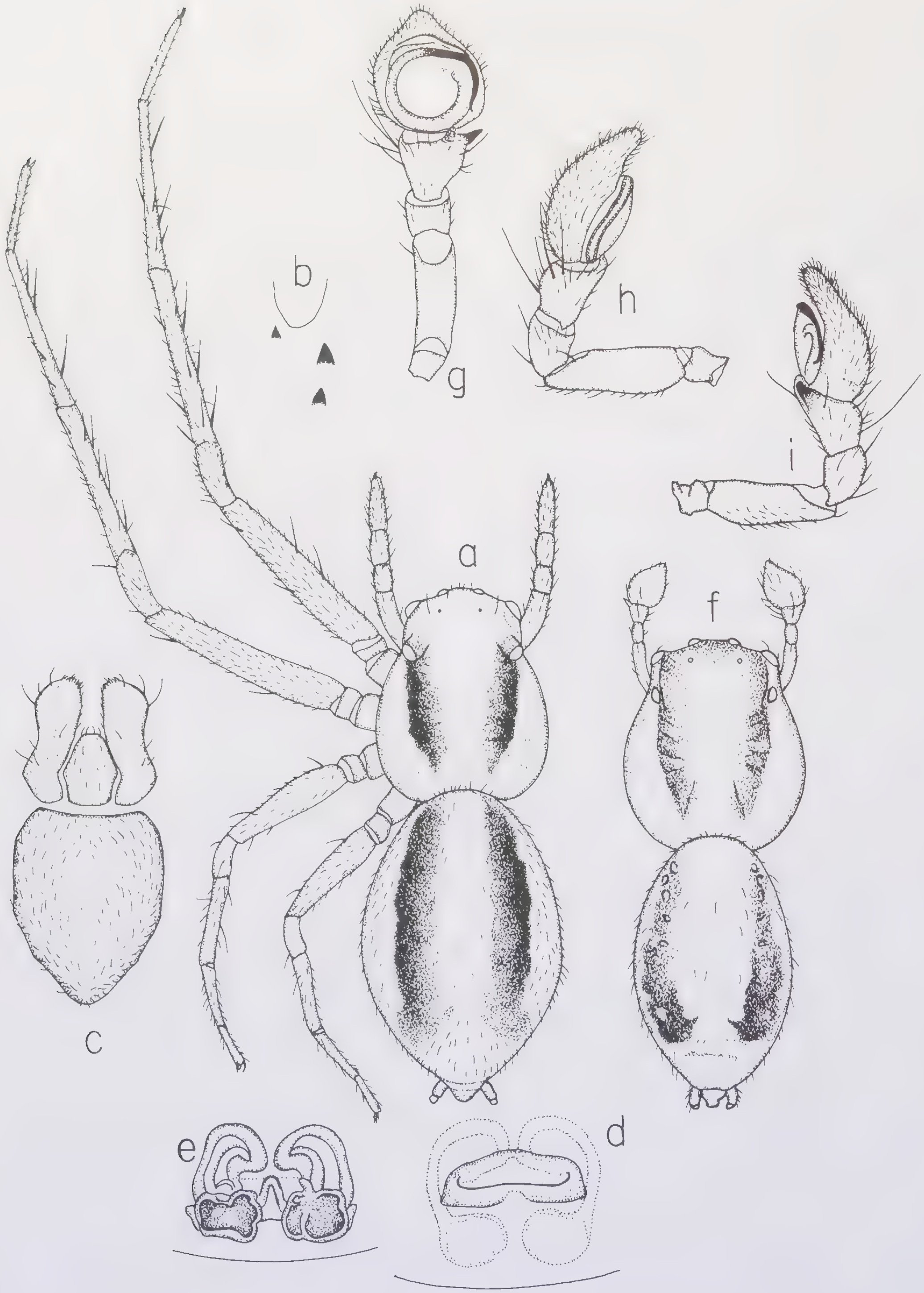

Fig. 150. Female *Lysiteles umalii* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); dorsal (d) and ventral (e) views of epigynum; and male, dorsal view without legs (f); and ventral (g) and lateral (hi) views of pedipalp.

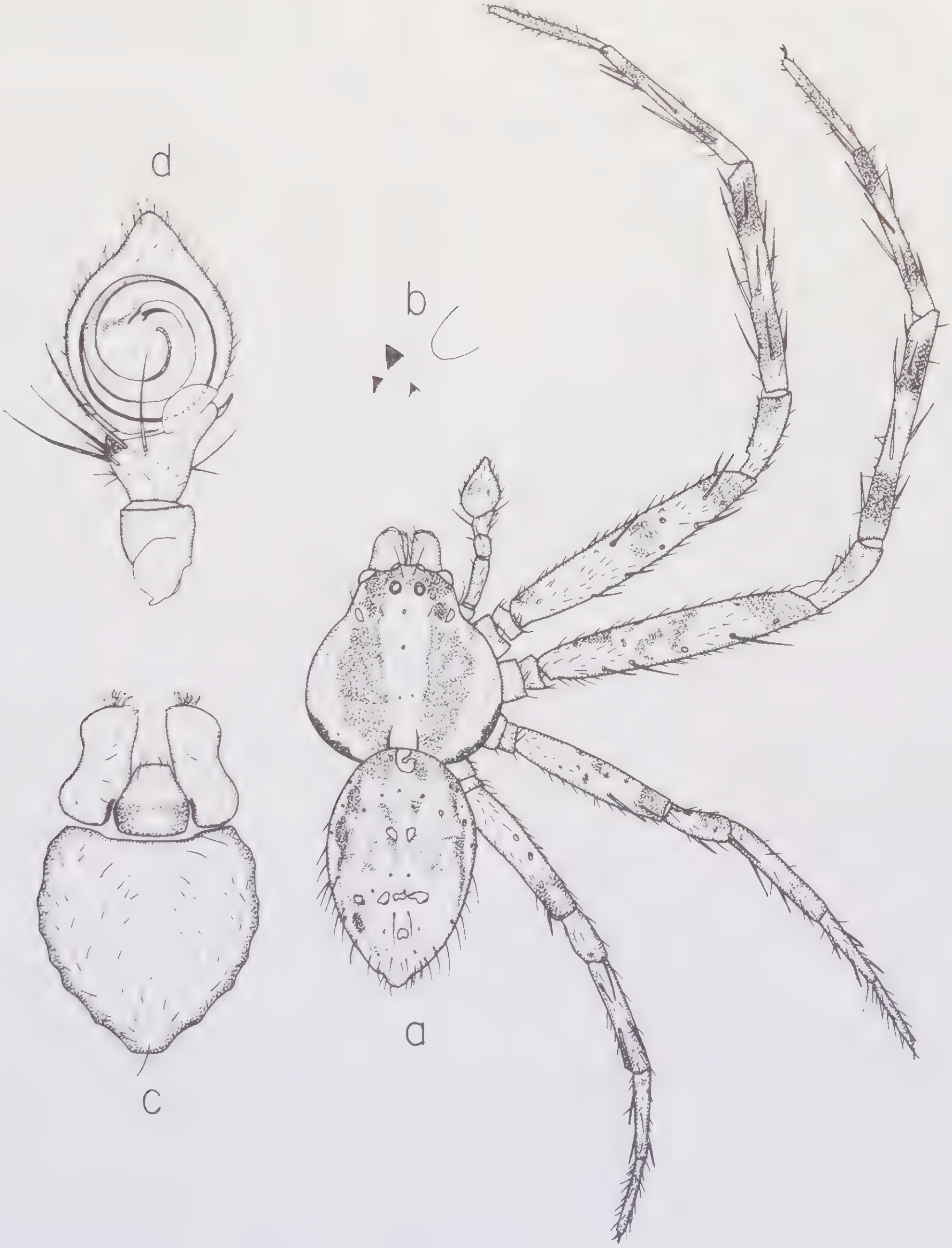

Fig. 151. Male *Lysiteles sorsogonensis* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 22 August 1985, R. Apostol and M. Perez; paratypes, three males, same data as holotype.
Distribution: Philippines.

Lysiteles sorsogonensis new species
(Fig. 151a–d)

Description:
Male: Total length 2.34 mm. Cephalothorax 1.09 mm long, 1.06 mm wide, 0.50 mm high. Abdomen 1.25 mm long, 0.90 mm wide, 0.50 mm high. Cephalothorax

yellow-brown with a broad inverted U-shaped dark brown band. Eight eyes in two recurved rows, PE row strongly recurved and longer (0.59 mm) than AE row (0.53 mm). Eye diameter (mm): ALE = 0.14, PLE = 0.09, AME = PME = 0.05. Eye separation: AME–AME = AME–ALE = PME–PME 1.6 times AME diameter, PME–PLE 3.8 times AME diameter, ALE–PLE 2.6 times AME diameter. MOQ narrower in front (0.17 mm) than behind (0.20 mm), both widths shorter than length (0.23 mm). Clypeus yellow-brown with three longitudinal (median and two laterals) broad brown bands, height small and as long as one AME diameter. Sternum yellow, longer than wide, apical margin concave, lateral margins serrated, and posterior end rounded between coxae IV. Labium brown, lateral margins of basal one half straight and rest moderately tapered towards apical end. Maxillae yellow with a truncate anterior end. Chelicerae with a brown band frontally, promargin and retromargin with two and one teeth each, respectively. Legs long and moderately slender, yellow-brown with two or three gray bands in each femora I to IV, apical one half of patella, apical and basal one third of femora I and II and metatarsi I and II brown, and middle of tarsi I and II slightly brown, apical one half of femora IV grayish brown. Spination in femora I = 5-3-3-0, II = 5-1-1-0, III = IV = 5-4-0-0; tibiae I = II = 2-8(2-2-2-2)-3-3, III = 2-4-0-2, IV = 2-3-0-2; metatarsi I and II with two pairs each of ventral spines, III = IV each with one pair of ventral spines only. Leg formula 2134. Pedipalp almost as long as femur I, tibiae with three long prolateral, one long dorsal, and one long ventral setae each, and five or six trichobothria dorsally, RTA and VTA present, RTA distally sclerotized and bifurcated, VTA large and hatchet-like. Embolus long and filiform, circling the tegulum twice, tegular apophysis absent.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.28	0.49	1.23	0.98	0.60	4.58
2	1.30	0.50	1.25	1.00	0.63	4.68
3	0.85	0.40	0.75	0.53	0.49	3.02
4	0.86	0.38	0.73	0.55	0.45	2.97
Pedipalp	0.38	0.33	0.20	–	0.36	1.27

Abdomen ovate, spinous, and gray-brown with irregularly distributed white spots. Venter yellow and clothed with fine hairs. Anterior pair of spinnerets diverging and prominently more robust than the posterior pair.

Etymology: Named after the type locality.

Natural history: A single male specimen was collected by a D-Vac suction machine from old rice stubble in September.

Material examined: PHILIPPINES: *Luzon Is.*, Sorsogon Prov., Sorsogon, 8 km SE of town proper, holotype male, 2 September 1988, J.L.A. Catindig and M. Perez.

Distribution: Philippines.

Lysiteles suwertikos new species
(Fig. 152a–i)

Description:

Female: Total length 4.40 mm. Cephalothorax 1.80 mm long, 1.65 mm wide, 1.10 mm high. Cephalothorax longer than wide, yellow-brown except for the reddish brown U-shaped band running from PLE to PME to PLE and aborted before the posterior end of thoracic region, black posterolateral one third of cephalothorax, and whitish eye margins, arms of U-band each with four long setae, two each between the posterolateral black band and subapex of U-band, two short and thin setae each below PLE, four long setae transversing PLE and PME, and a pair of thin and shorter setae inside MOQ. Eight eyes in in two strongly recurved rows, PE row nearly as long as the AE row. Eye diameter (mm): ALE = 0.20, AME = 0.10, PME = 0.05, PLE = 0.13. Eye separation: ALE–ALE 2.4 times AME diameter, AME–AME 2.5 times eye diameter, AME–ALE nearly twice AME diameter, PME–PME = AME–AME, four times PME diameter, PME–PLE 4.13 times AME diameter, ALE–PLE as long as AME–AME separation. Clypeus lined with four setae, wide, almost twice diameter of AME. Sternum yellow, heart-shaped with thickened lateral margins, concave posterior of labium, and blunt posteriorly between coxae IV. Maxillae longer than wide, yellow in apical one half and yellow-brown in posterior one half, brownish red along the outer lateral margins, and indented opposite base of pedipalp, apico-inner part of maxillae converging and with scopulae. Labium yellow with slight gray tinge, beyond midlength of maxillae, apex almost straight with five hairs, basolateral one third indented. Chelicerae reddish brown to yellow-brown, promargin and retromargin both with scopulae, promargin bears one tooth and retromargin two teeth. Legs moderately long, I and II distinctly longer than III and IV, legs all yellow except I and II with brown femora and grayish to black band at their subapex, tibiae I and II brown at both ends and yellow in the middle. Tibiae I and II with four pairs of ventral spines, metatarsus I bears six ventral spines, with those in promargins longer than those in retromargins except the subapical pair, apical retrolateral spine separated from the apicoventral spine by its length, midretrolateral spine almost in a straight line with midventral spines, metatarsi II with six and seven ventral spines in the right and left leg, respectively, midretrolateral spine forms a triangle with the midventral spines. Tarsi two-clawed, each claw of leg I with seven teeth and apicoventral tip of tarsus I with at least three plumose, blade-like, and pointed setae.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.10	0.78	1.85	1.65	0.85	7.23
2	2.05	0.80	1.95	1.60	0.90	7.30
3	1.72	0.50	1.00	0.70	0.55	3.87
4	1.20	0.48	0.95	0.75	0.53	3.91
Pedipalp	0.50	0.25	0.35	–	0.45	1.55

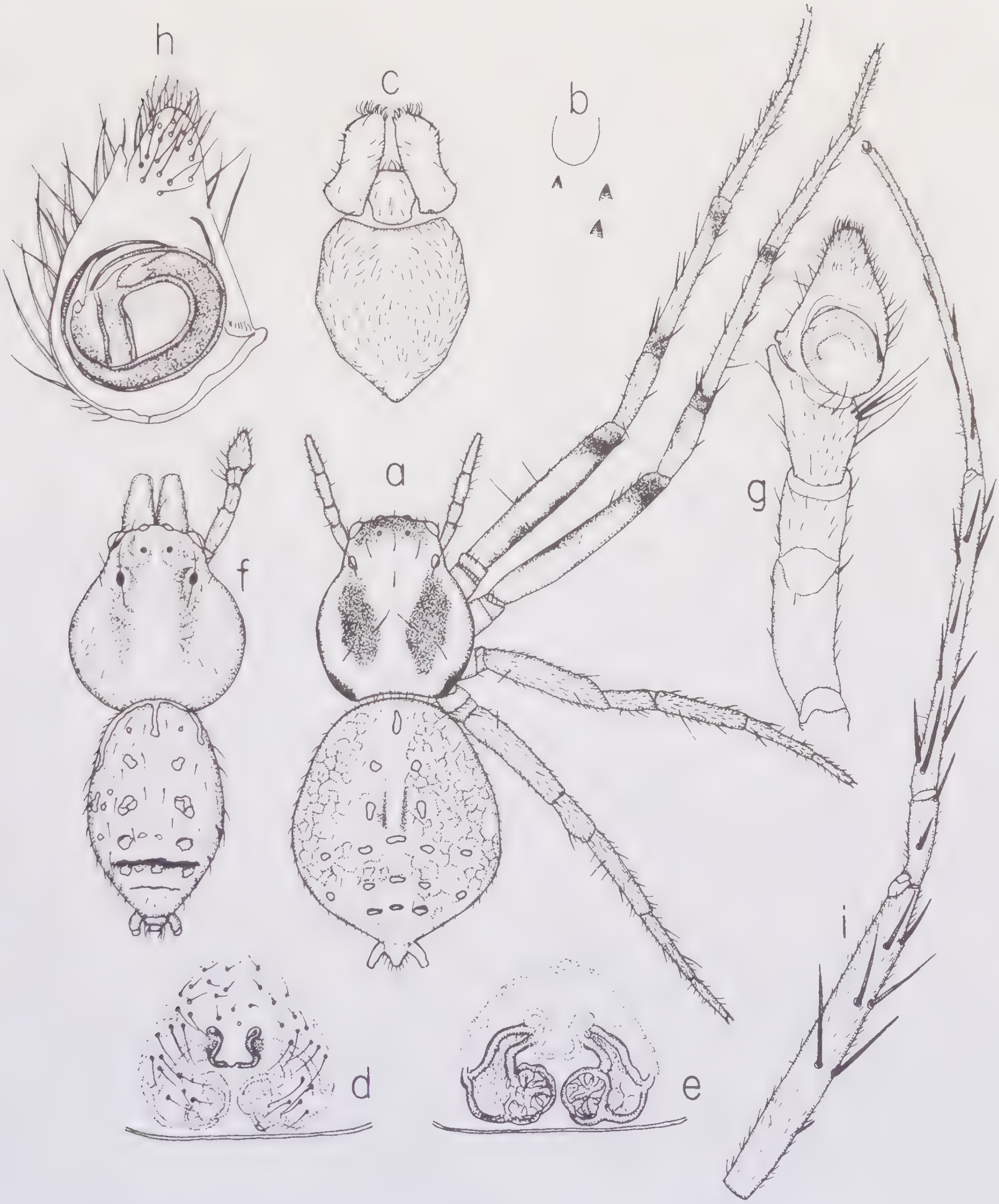

Fig. 152. Female *Lysiteles suwertikos* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) epigynum; and male, dorsal view without legs (f); ventral view of entire pedipalp (g); ventral close-up of cymbium and its components (h); and leg I (i).

Abdomen subglobular but widest in the basal one fourth, yellow-green with three reddish brown transversely convex bands in the posterior one half (note: lost in preserved specimens as shown in the figure), apical one half with five ovate white spots and 13 in the posterior one half forming a group of five, five, and three spots. Dorsum of abdomen with brown and pointed setae. Venter yellowish brown with light gray tinge between epigynum and spinnerets, ventrolateral sides each with at least ten slanted gray and white dotted lines emanating from lateroapicals to the spinnerets. Anterior pair of spinnerets close and parallel to each other, twice the size of the strongly diverging and slender posterior pair. Epigynum simple, with a black wavy U-shaped band dorsally, cleft posterior margin along epigastric furrow, spermathecae flask-like and with a bulbous multilobe bursa copulatrix posterior to the spermathecae. Book lungs nearly as long as wide, transversely lined with net-like four to six-sided markings.

Male: Total length 3.30 mm. Cephalothorax 1.50 mm long, 1.60 mm wide, 0.95 mm high. Abdomen 1.80 mm long 1.20 mm wide, 0.80 high. Cephalothorax wider than long, similar to the female except for smaller size and paler U-shaped band. Eight eyes in two strongly recurved rows, AE row less recurved than PE row. Eye diameter (mm): ALE = 0.16, PLE = 0.10, AME = 0.075, PME = 0.05. Eye separation: AME–AME twice AME diameter, AME–ALE 1.73 times diameter of AME, PME–PME 2.40 times AME diameter. PME–PLE 3.87 times AME or 5.80 times PME diameter, ALE–PLE 3.20 times AME or 1.80 times ALE diameter. Median ocular quadrangle wider in front than behind (0.30 : 0.26 mm), both widths shorter than length (0.33 mm). Clypeus height large, nearly twice diameter of AME. Sternum yellow to yellow-brown along lateral margins, shallow double cavities present opposite every coxa, anterior margin moderately concave, posterior end bears a narrow sclerotized plate between coxae IV, extended to pedicel. Labium and maxillae both longer than wide, very similar to those in female. Chelicerae yellow and moderately large, promargin and retromargin with scopulae or long hairs, promargin with two small teeth and retromargin has none. Legs I and II long and reddish brown, III and IV yellow and shorter than I and II. Tibiae I and II each with eight (four pairs) ventral spines. Metatarsi I and II each with four (two pairs) ventral spines. Leg formula 2143. Pedipalp yellow to pale yellow-brown, tibia with one long dorsal spine and three subapically long dorsal trichobothria, retrolateral of tibia with three long and three short spines. RTA with a broad base and sharply pointed tip. Ventral tibial apophysis (VTA) as long as RTA with a well-rounded tip. Cymbium longer than wide, moderately tapered, and rounded at apex, subbasoretrolateral part with a small apophysis. Embolus long, thin and its apical one half almost concealed by the ejaculatory duct and tegulum.

Length of leg and pedipalp segments (mm):

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.40	0.80	2.30	2.10	1.24	8.84
2	2.50	0.80	2.40	2.00	1.24	8.94
3	1.38	0.45	1.05	0.75	0.55	4.18
4	1.30	0.45	1.20	0.80	0.55	4.30
Pedipalp	0.53	0.28	0.35	–	0.48	1.64

Abdomen elongate, yellowish green, moderately spinous with lateroapical spines more robust and longer than the rest, seven white spots triangularly arranged anterior to the two transverse gray bands subposteriorly. Venter yellow except gray median below epigastric groove to spinnerets. Posterior spinnerets moderately diverging and more robust than the slender and strongly diverged anterior pair.

Etymology: Derived from the Tagalog words 'suwerte' (luck) + 'ko' (my).

Natural history: The holotype female was collected from KLT set along the border of upland rice in August. The paratypes (one male and one spiderling) were D-Vac collected from upland rice in October.

Material examined: PHILIPPINES: *Mindanao Is.*, Agusan del Sur, Claveria, Anei Vill., holotype female, 17 August 1989, E. Libetario; Hinaplasan Vill., paratypes, one male and one spiderling, 9 October 1985, A.T. Barrion.

Distribution: Philippines.

Lysiteles boteus new species

(Fig. 153a–f)

Description:

Male: Total length 3.40 mm. Cephalothorax 1.60 mm long, 1.45 mm wide, 1.10 mm high. Abdomen 1.80 mm long, 1.30 mm wide, 1.20 mm high. Cephalothorax yellow-brown except inverted triangular dark brown band in the eye area extended to thoracic area, with a pale yellow band in the middle and gray lateral margins. Eight eyes in two rows, dark black at bases and rings except in AME. AE row slightly longer than PE row (0.85 : 0.80 mm). Eye diameter (mm): ALE = 0.20, PLE = 0.13, AME = 0.10, PME = 0.08. Eye separation: AME–AME 1.3 times eye diameter, AME–ALE = 1.5 times AME diameter, PME–PME twice PME or 1.6 times AME diameter, PME–PLE 2.5 times AME diameter, ALE–PLE 1.5 times AME diameter. Median ocular quadrangle wider behind (0.38 mm) than in front (0.28 mm) and length (0.30 mm). Clypeus height large, 1.5 times AME diameter. Sternum yellowish brown, longer (0.38 mm) than wide (0.78 mm), sublaterals with longer hairs than the median area, anterior margin concave, laterals with doubled concavities opposite each coxae (note: less prominent in coxae I), posterior end truncate between coxae IV. Labium longer (0.33 mm) than wide (0.23 mm), pale brown to yellow-brown, constricted laterally a little below midlength, distal end truncate and yellow. Maxillae yellow, longer than wide, constricted opposite base of pedipalp, apex of retrolateral and apical area with scopulae. Chelicerae yellowish brown but yellow distally, promargin bears two teeth and retromargin with one. Legs I and II longer and more yellow-brown than III and IV, tibia I with four pairs of ventral spines, subapicoventral pair not in a straight line but with ventroretromarginal spine higher than the ventropromarginal. Tibia II has five spines (two pairs + one), middle pair arrangement is similar to the subapicoventral pair of spines in tibia I, basal pair has ventroretromarginal spine more basal than ventropromarginal spine. Tibiae II and IV and metatarsi III and IV with two and one pairs of ventral spines, respectively. Tibiae to tarsi of legs I and II more hirsute than femora. Leg form-

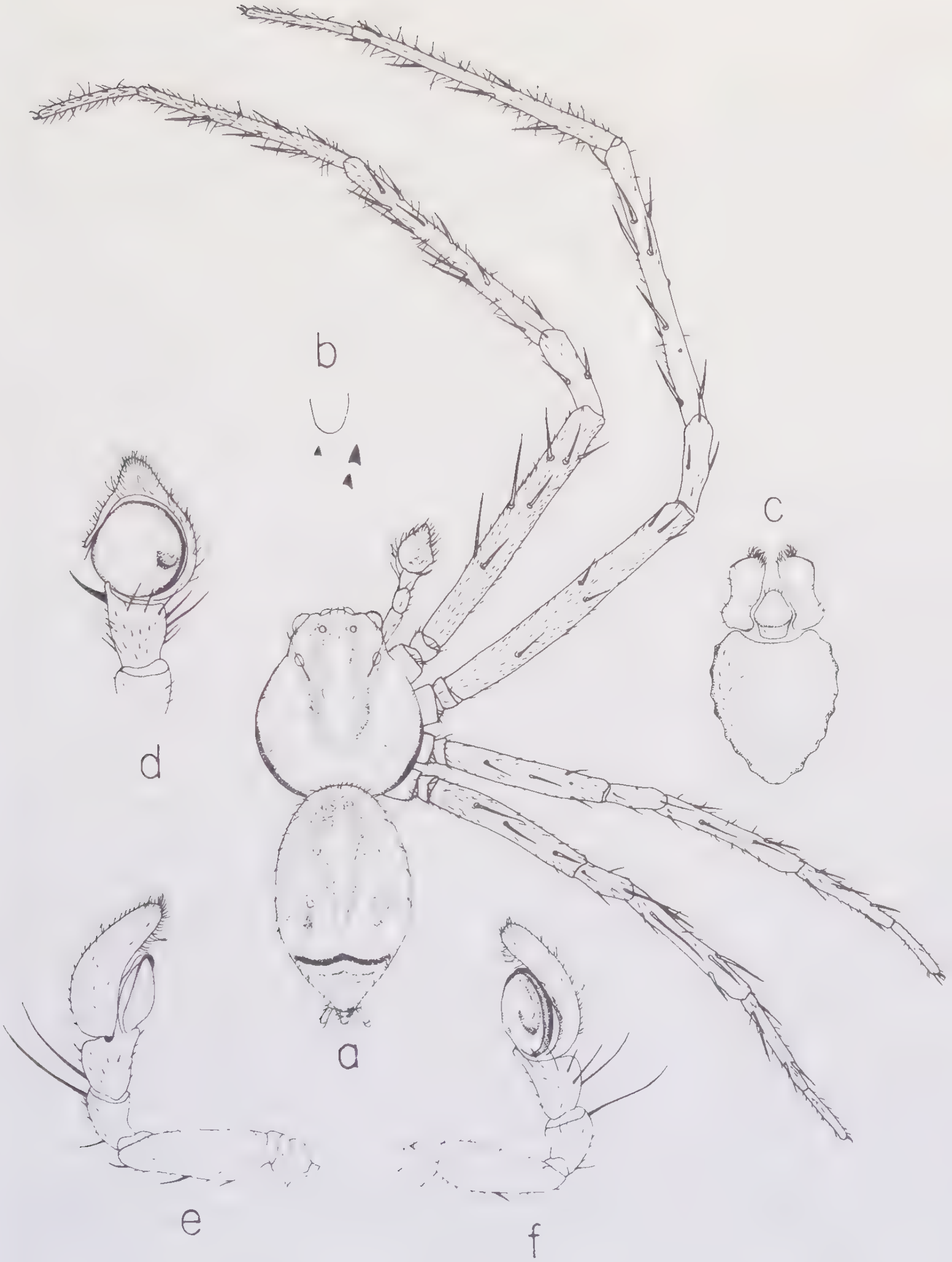

Fig. 153. Male *Lysiteles boteus* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and vental (d) and lateral (ef) views of pedipalp.

ula 2143. Pedipalp yellowish brown with black retrolateral apophysis and embolus, total length longer than combined length of metatarsus and tarsus of leg IV, RTA sharply pointed and about 0.63 of tibial diameter at that point. Ventral tibial apophysis (VTA) with a blunt and inwardly hooked tip. Cymbium longer than wide and appears constricted subbasally after tip of RTA, tegulum broad and subglobular, embolus long and coiled, almost reaching tip of RTA.

Abdomen oblongate and clothed with long pointed spine dorsally, pale brown with white laterals, eight to ten white spots dorsally and five or six transverse black bands in decreasing diameter towards the anal tubercle with a median pale transverse black band.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	0.75	2.30	2.00	1.10	8.40
2	2.30	0.80	2.35	2.10	1.05	8.60
3	1.40	0.52	1.20	0.80	0.70	4.62
4	1.30	0.50	1.30	0.90	0.60	4.60
Pedipalp	0.50	0.25	0.30	–	0.60	1.65

Venter white except for the yellow-brown lungs, oblong gray-brown band enclosing five pairs of subspherical slits arranged in two longitudinal parallel rows and sitting on top of a black transverse band anterior to the spinnerets. Ventrolaterals with black tinges, becoming more brown towards the posterior. Anterior pair of spinnerets moderately robust and diverging, shorter than the strongly divergent posterior spinnerets.

Etymology: Named after the bottle-shaped gray-brown band in the abdominal venter.

Natural history: Handpicked from a leaf of a 45-day-old irrigated rice plant in September.

Material examined: PHILIPPINES: *Luzon Is.*, Abra Prov., Salapadan, Salapadan Vill., holotype male, 22 September 1989, A.T. Barrion.

Distribution: Philippines.

Lysiteles magkalapitus new species

(Fig. 154a–g)

Description:

Male: Total length 5.40 mm. Cephalothorax 2.40 mm long, 2.35 mm wide, 1.50 mm high. Abdomen 3.00 mm long, 1.60 mm wide, 1.25 mm high. Cephalothorax chocolate-brown, mottled with white in the cephalic foveal and submarginal areas. Eight eyes, homogeneous black, in two strong measured rows, AE row less recurved and almost as long as the strongly recurved PE row. Long setae, each located posterior to PLE. Eye diameter (mm): ALE = 0.26, PLE = 0.15, AME = PME = 0.10. Eye separation: AME–AME 1.6 times eye diameter. AME–ALE twice AME diameter, PME–PME almost equal to AME–AME, PME–PLE 4.5 times AME diameter, PLE–ALE four times AME diameter. Median ocular quadrangle broader behind (0.40 mm) than in front (0.38 mm), both widths shorter than length (0.49 mm). Clypeus height large, 1.8 times AME diameter, and bears seven setae. Sternum yellow, a little longer than wide, sublateral margins with short brown hairs, anterior end moderately concave and posterior rounded between coxae IV. Labium yellowish brown, similar to maxillae, one third longer than wide, beyond midlength of maxillae, and broadest at midhalf. Maxillae longer than wide, yellow-brown to brown scopulae prominent on distal end, outer lateral margin concave at midlength. Chelicerae brownish yellow dorsally, with a pair of five long setae converging on their apices and scopulae, and yellow ventrally, fang short and light brown, promargin bears two teeth and retromargin has one tooth. Legs brown in I and II, patellae III and IV, apices of femora, tibiae and metatarsi III and IV, rest of leg parts yellow. Metatarsi and tarsi I and II with thick fine hair (scopulae), mostly in the venter. Spination in femora I = 5-1-4-5, II = 5-1-4-4, III = 5-0-3-2, IV = 5-0-3-1; tibiae I = II = 3-8-3-3; metatarsi I = 0-8-3-3 and II = 2-7-3-4. Tibiae I and II each with four pairs of ventral spines, metatarsi I with four pairs of ventral spines, II with three pairs + one. Tarsi two-clawed and bear undeveloped tuft of hairs underneath the posterobasal enlargement of tarsi, each claw with five teeth in leg I. Leg formula 1243. Pedipalp shorter than femora IV, tibia with one long dorsobasal seta and one long trichobothrium retrolaterally, prolaterals with three long setae, and dorsal with six to nine small trichobothria. Ventral tibial apophysis (VTA) intermediate tibial apophysis (ITA), and RTA prominently developed, apical ends of VTA and ITA touching each other, midventer of VTA bears a small spur, ITA closer to RTA than to VTA, RTA cleft on the inside when viewed laterally, all apical tips of tibial apophyses blunt and rounded. Cymbium longer than wide, tapers toward apical one third. Tegulum apophysis not developed, embolus long and spiral, winding twice around tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.80	1.50	4.70	4.55	1.60	17.15
2	4.70	1.40	4.50	4.25	1.55	16.40
3	2.00	0.80	1.85	1.35	0.85	6.85
4	2.35	0.75	1.75	1.70	0.90	7.45
Pedipalp	0.70	0.40	0.44	–	0.65	2.19

Abdomen elongate and spinous, brown to dark brown or gray with scattered circular brown spots, the largest pair of spots located in upper dorsal one third, and a triangular white spot in lower dorsal posterior one third. Venter of abdomen yellow-brown, bordered laterally with yellow circular spots. Book lungs yellow, grayish in between book lungs anterior to epigastric furrow, enclosing a pair of ovate yellow spots. Spinnerets not visible dorsally, anterior pair reddish brown with a white and yellow base, posterior pair more slender and slightly longer than the anterior pair.

Etymology: Derived from the nearly touching or converging tips of tibial apophysis, ‘magkalapit’ in Tagalog.

Natural history: Two males were collected from ricefields with yellow pan trap and D-Vac suction nets in September and October, respectively.

Material examined: PHILIPPINES: *Mindanao Is.*, Agusan del Sur Prov., Claveria, Hinaplanan Vill., holotype male, 23 September 1985, Ed Libetario; paratype one male, 9 October 1985, A.T. Barrion.

Distribution: Philippines.

Genus *Misumenops* F.O. Pickard-Cambridge

Misumenops F.O. Pickard-Cambridge, 1900. Biol. Centr.-Amer., Zool. Arachn., Araneida 2: 134.

Misumessus Banks, 1904. J. N.Y. Ent. Soc. 12: 112.

Metadiaea Mello-Leitao, 1929. Arch. Mus. Nac. Rio de Janeiro 31: 237.

Misumenops (Misumessus) Schick, 1963. Bull. Amer. Mus. Nat. Hist. 129: 110.

Misumenops (Misumenops) Schick, 1965. Bull. Amer. Mus. Nat. Hist. 129: 111.

Small to medium-sized thomisids of a large and heterogeneous composition with approximately 100 described species. *Misumenops* species have almost as long as wide moderately flat prosoma, with setae on the prothorax poorly developed; LE larger than the ME, tubercles of

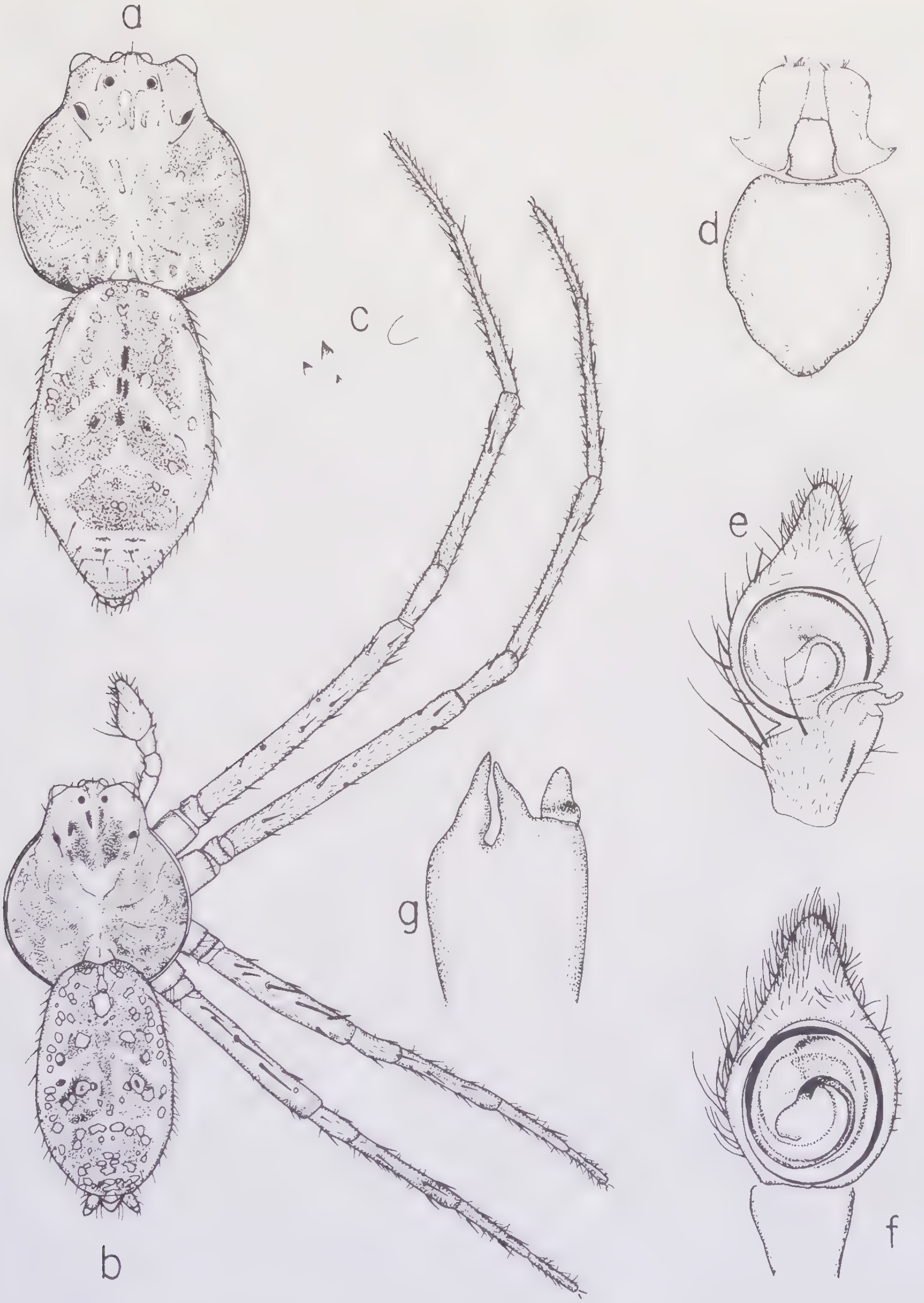

Fig. 154. Male *Lysiteles magkalapitus* n. sp. (a); paratype male (b); cheliceral teeth (c); sternum, labium, and maxillae (d); ventral views of pedipalps (ef); and tibial apophyses (g).

lateral eyes united; eye diameter: ALE > PLE ⩾ AME ⩾ PME; eye separation: AME–AME ⩾ AME–ALE, PME–PME > PME–PLE; MOQ wider than long, narrow in front but wide behind; clypeus height almost as large as AME–AME separation; sternum and labium longer than wide; leg formula 1243 or 2143; tarsal claws with two to five teeth; spines developed, tibiae I and II often without lateral spines; pedipalp of male with VTA, ITA, and RTA; VTA digitiform, RTA apically sclerotized, often with a dorsal tooth; tegular apophysis absent; embolus filiform, short, and sometimes curved apically; female epigynum with central hood, intromittent orifices at both sides of the hood; small spermathecae, tubular; abdomen pear-shaped, as long as wide in female and longer than wide in male, with long hairs.

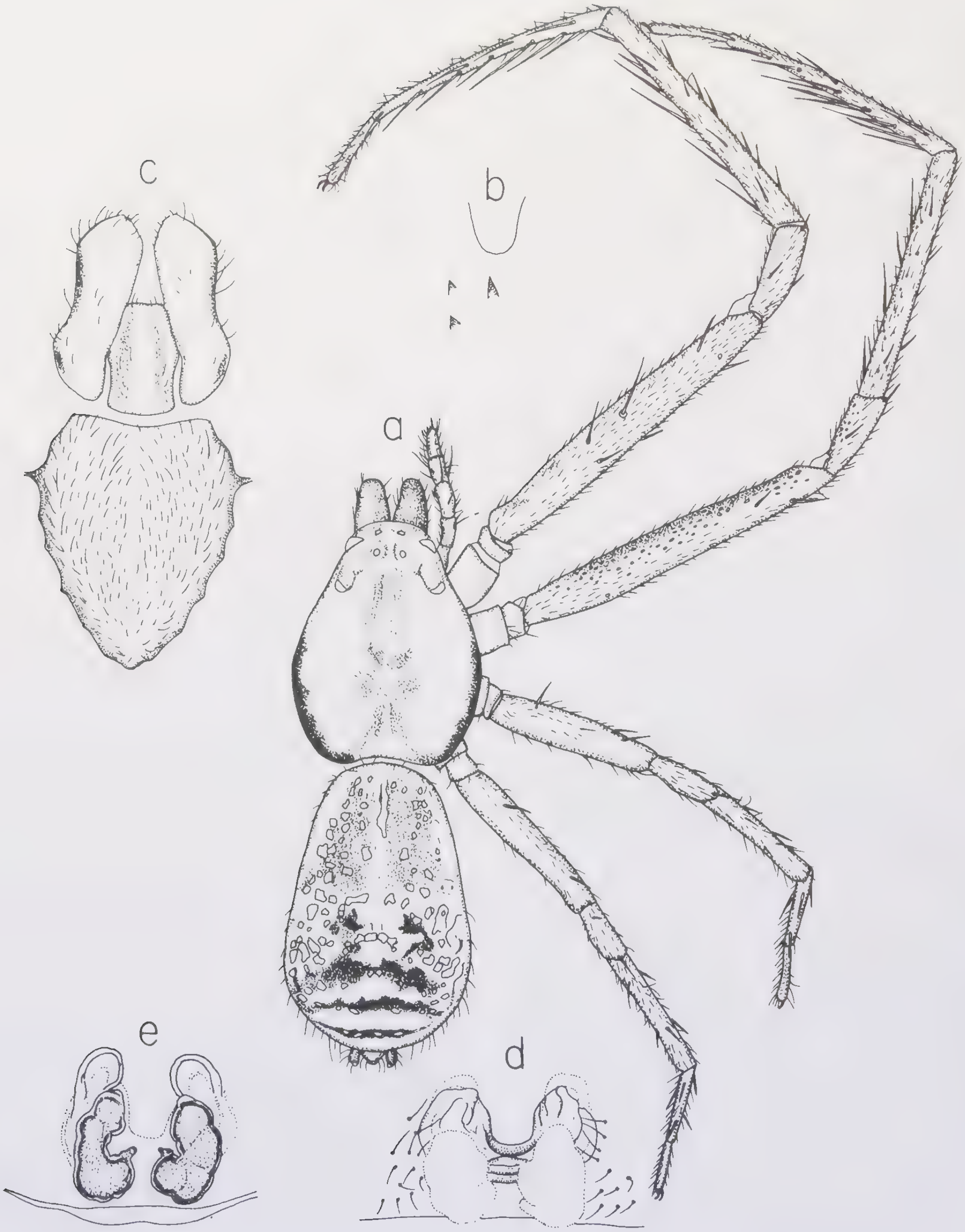

Fig. 155. Female *Misumenops morrisi* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Misumenops morrisi new species
(Fig. 155a–e)

Description:

Female: Total length 7.10 mm. Cephalothorax 2.90 mm long, 2.40 mm wide, 2.10 mm high. Abdomen 4.20 mm long, 2.60 mm wide, 2.45 mm high. Cephalothorax yellow-brown with a moderately broad brown longitudinal median band running from ME and broadened in the clypeus anterior to ALE to posterior of foveal area; brown V-shaped band in foveal area and dark brown lateral margins distinct, margins of eyes each with a narrow white ring and rest black, particularly the tubercles of lateral eyes; cephalic area with more setae than the thoracic area. Eight eyes in two recurved rows, AE row shorter than PE row (1.26 : 1.50 mm). Eye diameter (mm): ALE = 0.23, PLE = 0.16, AME = 0.10, PME = 0.09. Eye separation (mm): AME–AME = 0.21, AME–ALE = 0.26, ALE–PLE = 0.33, PLE–PME = 0.54, PME–PME = 0.23, PME–ALE = 0.35. Median ocular quadrangle with similar anterior and posterior widths, height greater than either width (0.55 : 0.43 mm). Clypeus height large, 3.5 times AME diameter. Sternum yellow and clothed with short black fine hairs, longer than wide, anteriorly concave, and posterior end blunt. Labium reddish brown and longer than wide. Maxillae yellow except dark brown apical one half in the outer side, longer than wide, apices moderately converge. Chelicerae brown with black mottles dorsally, retromargin bears a small tooth and promargin has two teeth covered by the scopulae. Legs slender, long I and II yellowish brown and short III and IV yellow. Femur I with three prolateral spines and II with only one. Tibia I with 12 (2-2-1-2-2-2-1) ventral spines, II with ten (2-1-2-2-2-1) in the right leg and 12 (1-2-2-1-2-1-2-1) in the left leg. Metatarsi I and II each with 14 ventral spines. Leg formula 2143. Pedipalp yellow except dark brown apical one half of tarsus with a claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.35	1.25	3.00	2.70	0.90	11.20
2	3.40	1.30	3.10	2.60	0.85	11.25
3	1.70	0.85	1.45	1.00	0.50	5.50
4	2.10	0.75	1.50	1.15	0.70	6.20
Pedipalp	0.80	0.40	0.40	–	0.65	2.25

Abdomen pale yellow with chalk-white spots and four or five transverse black bands in the broadest posterior one half, venter yellow with a brown median band lined with seven to ten paired brown dots, laterals grayish black with chalk-white dots. Spinnerets brown or dark reddish brown; anterior pair with bases close to each other and diverging towards apices. Epigynum simple with a pair of light moderately C-shaped bands with a U-shaped sclerotized plate in the middle. Spermathecae kidney-shaped with four to six swellings.

Etymology: Named after Dr Richard Morris, former Cropping Systems Programme Head.

Natural history: The holotype female was collected from Malaise trap set in an upland dibbled ricefield in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, Mt. Makiling, holotype female, 18 August 1988, A.T. Barrion and M. Perez.

Distribution: Philippines.

Misumenops maygitgitus new species

(Fig. 156a–f)

Description:

Female: Total length 4.40 mm. Cephalothorax 2.10 mm long, 2.20 mm wide, 1.20 mm high. Abdomen 2.30 mm long, 2.20 mm wide, 1.45 mm high. Cephalothorax dark yellow with whitish eye tubercles and brown fine hairs and long setae scattered in the cephalic and thoracic areas. Eight eyes in two recurved rows, AE row shorter (0.95 mm) than PE row (1.18 mm). Eye diameter (mm): ALE = 0.14, PLE = 0.10, AME = PME = 0.08. Eye separation: AME–AME almost three times one AME diameter, AME–ALE 2.5 times AME diameter, PME–PME 4.13 times AME diameter, PME–PLE 3.8 times AME diameter, PLE–ALE 2.63 times AME diameter. MOQ wider behind (0.48 mm) than in front (0.38 mm), both widths longer than length (0.30 mm). Clypeus height large, 3.13 times AME diameter. Sternum dark yellow, similar to legs, labium, maxillae, and chelicerae, heart-shaped, with a concave apical margin and blunt posterior tip between coxae IV. Labium longer (0.40 mm) than wide (0.35 mm), distal end strongly rounded and slightly above midlength of maxillae. Outer lateral margin of maxillae concave at midlength and broadens subapically. Chelicerae with a small fang, promargin bears two teeth and retromargin has one tooth. Legs relatively long, particularly I and II. Right tibia I with five ventral spines, left one has only four, promarginal spines larger than the retromarginal spines. Metatarsi I and II with two prolateral and five pairs of ventral spines each. Tarsi two-clawed with tenent hairs, each claw with at least three teeth. Leg formula 1243. Pedipalp yellow, almost as long as metatarsus I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.70	1.75	2.00	1.60	1.10	8.55
2	2.10	1.10	1.90	1.50	1.05	8.25
3	1.20	0.73	1.00	0.68	0.58	4.19
4	1.60	0.63	1.23	0.80	0.63	4.89
Pedipalp	0.45	0.25	0.28	–	0.58	1.56

Abdomen white with five light brown spots in the apical one half, finely haired and bears five to seven U-shaped striae emanating from basal one third of abdomen to the laterals. Spinnerets not visible dorsally, anterior pair broad basally, yellow-brown, and close to each other, posterior pair yellow and slightly larger than the anterior pair. Epigynum bears a pair of C-shaped bands facing each other. Spermathecae double-knob-like in appearance, apical one half bears a highly sclerotized structure.

Etymology: Named after the abdominal feature: striated in Tagalog is 'maygitgit'.

Natural history: The holotype female was vial-tapped from the panicle of a traditional upland rice variety in August.

Material examined: PHILIPPINES, *Mindanao Is.*, Zamboanga del Sur, Betinan, holotype female, 9 August 1979, A.T. Barrion.

Distribution: Philippines.

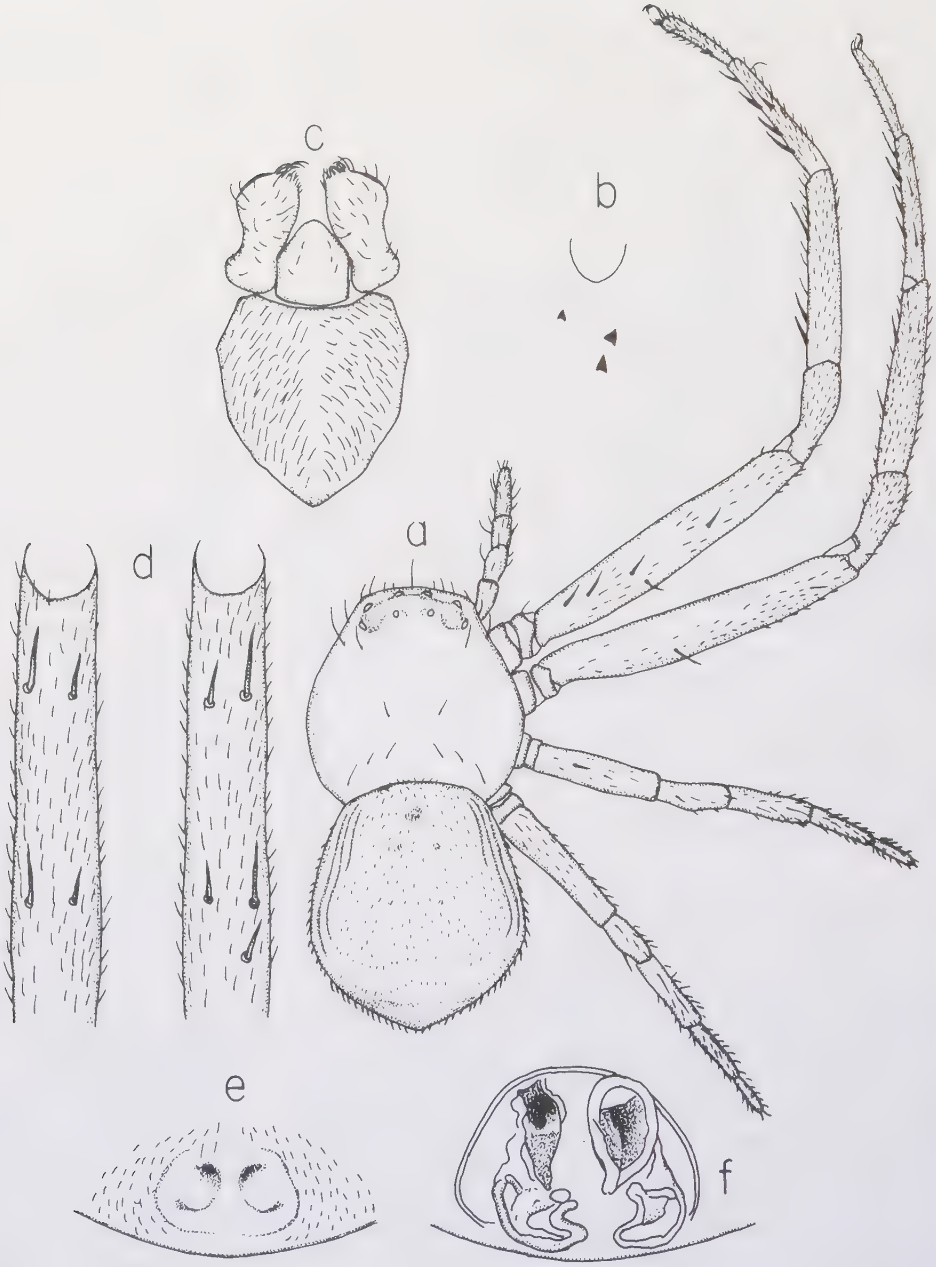

Fig. 156. Female *Misumenops maygitgitus* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); ventral view of left and right tibia I (d); and dorsal (e) and ventral (f) views of epigynum.

FAMILY PHILODROMIDAE WALCKENAER

(Philodromid Spiders)

Philodromidae closely resemble the family Thomisidae in terms of erratic movement and laterigrade legs; however, philodromids have typically flattened bodies; flat carapace slightly longer than wide and smoothly convex on lateral sides; eyes uniform in size in two recurved rows, PE row more recurved than AE row, lacks prominent tubercles; secondary eyes bear no tapestrum; legs long, slender, with semierect or recumbent spines, II longest though I and II usually slightly longer and more robust than III and IV; femur I without cluster of stout erect spines; tarsi two-clawed; pedipalp of male with RTA of various shapes; VTA may or may not be present; embolus long to short, slender, and arched around the distal end of tegulum; female epigynum a flat plate with copulatory openings on the laterals, spermathecae kidney-shaped; abdomen oblongate, broadest at midlength or towards the posterior, flattened dorsally, usually with distinct heart-like markings or chevrons.

Most of the philodromids inhabit grasses, mature and mate in the rainy season, and female the lays eggs at the onset of summer. The female makes egg sacs on folded grass leaves.

The Philodromidae are small to medium-sized spiders, comprising approximately 30 genera and 475 species scattered throughout the world (Dondale and Redner 1978).

Genus *Philodromus* Walckenaer

Philodromus Walckenaer. 1825. Ent. Fr. Ar.: 86.

The worldwide genus *Philodromus* Walckenaer consists of small to medium-sized spiders about 3.08–7.40 mm long, with 162 nominal species. Members of the genus are extremely agile, commonly found on plant stems, foliage, and panicles. They also mimic the coloration of the substrate. *Philodromus* species have flattened carapace, smoothly convex at lateral sides, as long as wide to slightly longer than wide; small eyes, uniform in size, PME closer to PLE than to each other; laterigrade legs long and slender, leg II usually the longest, I, III, and IV subequal in length and thickness; pedipalp of male with RTA and VTA; embolus hairlike, slender, and variable in length; female epigynum bears a flat median septum, lateral margins distinct, atrium modified to a small pair of depressions on the anterolaterals of the median septum, spermathecae variable in shape, depending on the species; abdomen oval, usually angulate laterally, moderately flat, and dorsally bears heart-shaped markings and chevrons.

Philodromus kianganensis new species
(Fig. 157a–e)

Description:
Female: Total length 3.08 mm. Cephalothorax 1.13 mm long, 1.25 mm wide, 0.50 mm high. Abdomen 1.95 mm long, 1.23 mm wide, 0.85 mm high. Cephalothorax pale yellow lined with minute hairs dorsally, with white lateral margins, setaceous clypeus, and lateral sides of lateral eyes. Eight eyes in two recurved rows, short AE (0.35 mm) slightly recurved, PE row strongly recurved and long (0.55 mm). Eye diameter (mm): PLE = 0.04, ALE = AME = 0.03, PME = 0.25. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.06, PME–PME = 0.19, PME–PLE = 0.18, ALE–PLE = 0.21. MOQ narrower in front (0.20 mm) than behind (0.25 mm), length (0.18 mm) shorter than anterior width. Clypeus moderately wide, nearly three times AME diameter, and bears nine setae, with the middle setae projected upward. Sternum yellow, hirsute (though hairs minute), posterior end well rounded and beyond the widely separated coxae IV. Labium and maxillae yellow, typical of the genus. Legs yellow with lateroventral longitudinal brown stripe from patellae to metatarsi of all legs, brown stripe reduced to basal one half in metatarsi I and IV, base of tarsi III and IV with a small short stripe. Tibiae I and II and metatarsi I and II each with two pairs of ventral spines. Leg formula 2413. Pedipalp yellow with eight to ten hairs in two rows of claw tufts, total length slightly shorter than femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.10	0.40	0.90	0.71	0.50	3.61
2	1.40	0.60	1.20	0.85	0.53	4.58
3	1.20	0.35	0.85	0.70	0.45	3.55
4	1.35	0.40	0.85	0.63	0.40	3.63
Pedipalp	0.34	0.20	0.24	–	0.30	1.08

Abdomen white and elongate, narrower than cephalothorax, subtruncate apex with fine short hairs, posterior tip tapers without visible spinnerets dorsally; venter yellowish medially and white laterally, with an oblique broad brown band subposteriorly. Spinnerets with a thin white band at base of second segment of nearly contiguous anterior spinnerets. Epigynum with a tent-like sclerotized pattern, spermathecae ovate and converged apically.
Etymology: Named after type locality.
Natural history: Sweep-net-collected from irrigated rice in January.
Material examined: PHILIPPINES: *Luzon Is.*, Mt. Province, Kiangan Vill., holotype female, 15 January 1990, A.T. Barrion.
Distribution: Philippines.

Genus *Thanatus* C.L. Koch

Thanatus C.L. Koch, 1837. Veb. Ar. Syst. 1: 25.

Thanatus C.L. Koch consists of small philodromid spiders about 4.40–6.00 mm long and represented worldwide, with only 68 nominal species. The members of the genus are readily recognized by their least agile movement, least flattened bodies, and least laterigrade legs; hence, *Thanatus* spp. are sometimes confused with wolf spiders of the family Lycosidae. In general, *Thanatus* has moderately convex, slightly longer than wide carapace, smoothly convex on lateral sides; small eyes subequal in size, PE row moderately recurved and posterior eyes uniformly separate from each other; legs II and IV longer than I and III, stout with scopulae, metatarsus I without prolateral and retrolateral spines; male pedipalp with a robust PTA extended to the ventral side, forming a ridge on the tip, VTA absent; embolus usually short; female epigynum bears a broad flat median septum with slitlike copulatory orifices on its laterals; spermathecae slender to broad, smooth with shallow grooves, close to each other, and each has an anterior spermathecal organ; abdomen broadest at midlength, rounded along margins, moderately convex dorsally, with prominent dark heart-shaped marking on yellow or red background.

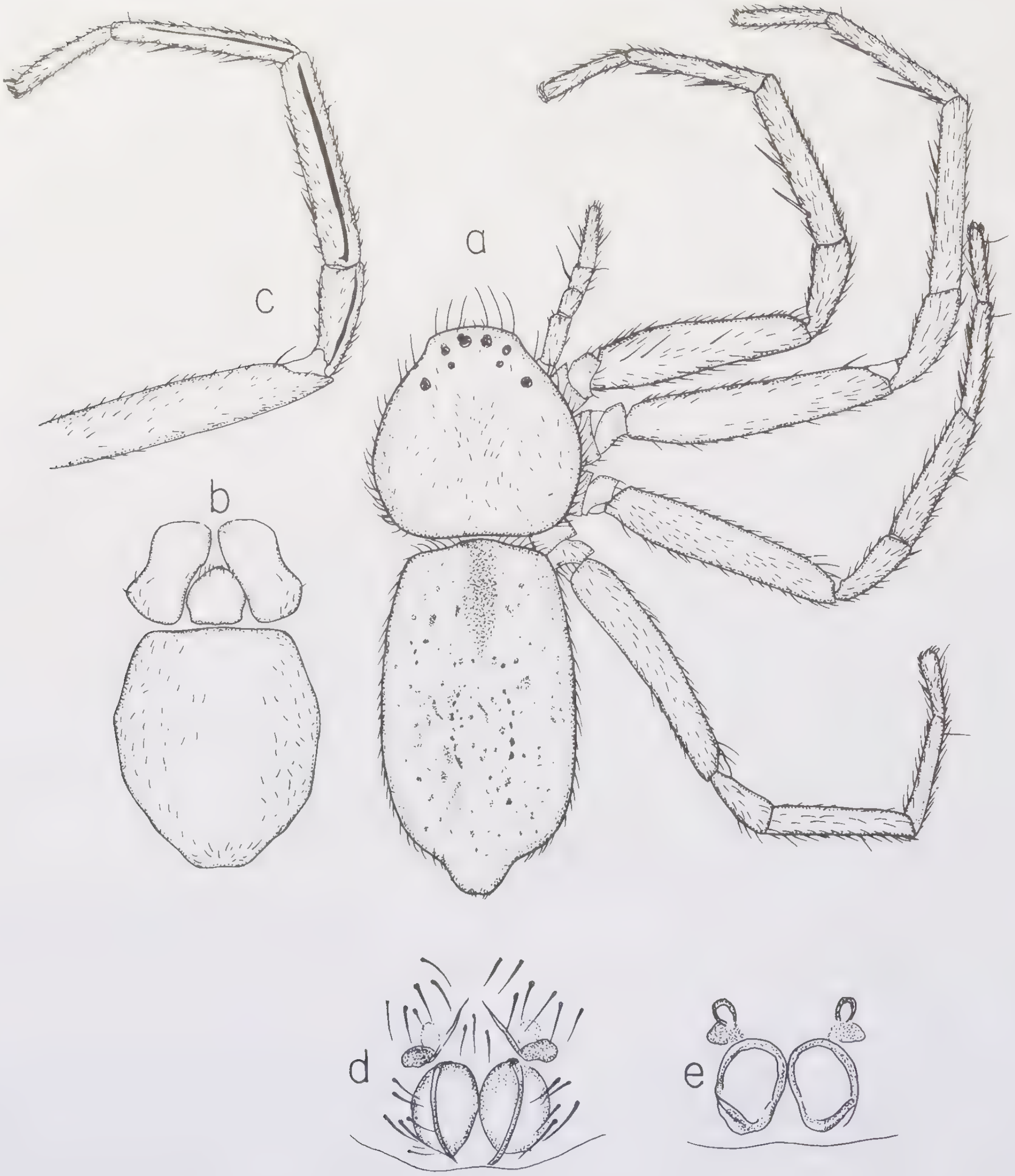

Fig. 157. Female *Philodromus kianganensis* n. sp. (a); sternum, labium, and maxillae (b); left leg II (c); and dorsal (d) and ventral (e) views of epigynum.

Thanatus parangvulgaris new species
(Fig. 158a–h)

Description:

Male (Fig. 158a–e): Total length 4.40 mm. Cephalothorax 2.10 mm long, 2.00 mm wide, 1.50 mm high. Abdomen 2.30 mm long, 1.50 mm wide, 1.50 mm high. Cephalothorax yellow-brown middorsally and with a broad brown longitudinal band subdorsally, cephalic relatively more hirsute than the thoracic area. Eight eyes, all dark in appearance, in two recurved rows, with AE row shorter (0.60 mm) than PE row (0.90 mm). Eye diameter (mm): AME = 0.09, ALE = PME = PLE = 0.08. Eye separation: AME–AME 1.7 times AME diameter, ALE–AME as long as ALE diameter, PME–PME 2.6 times AME diameter, PME–PLE 2.2 times AME diameter, ALE–PLE as long as PME–PLE separation. Median ocular quadrangle one fourth wider behind than in front, anterior width (0.30 mm) shorter than length (0.38 mm). Clypeus height large, 2.2 times AME

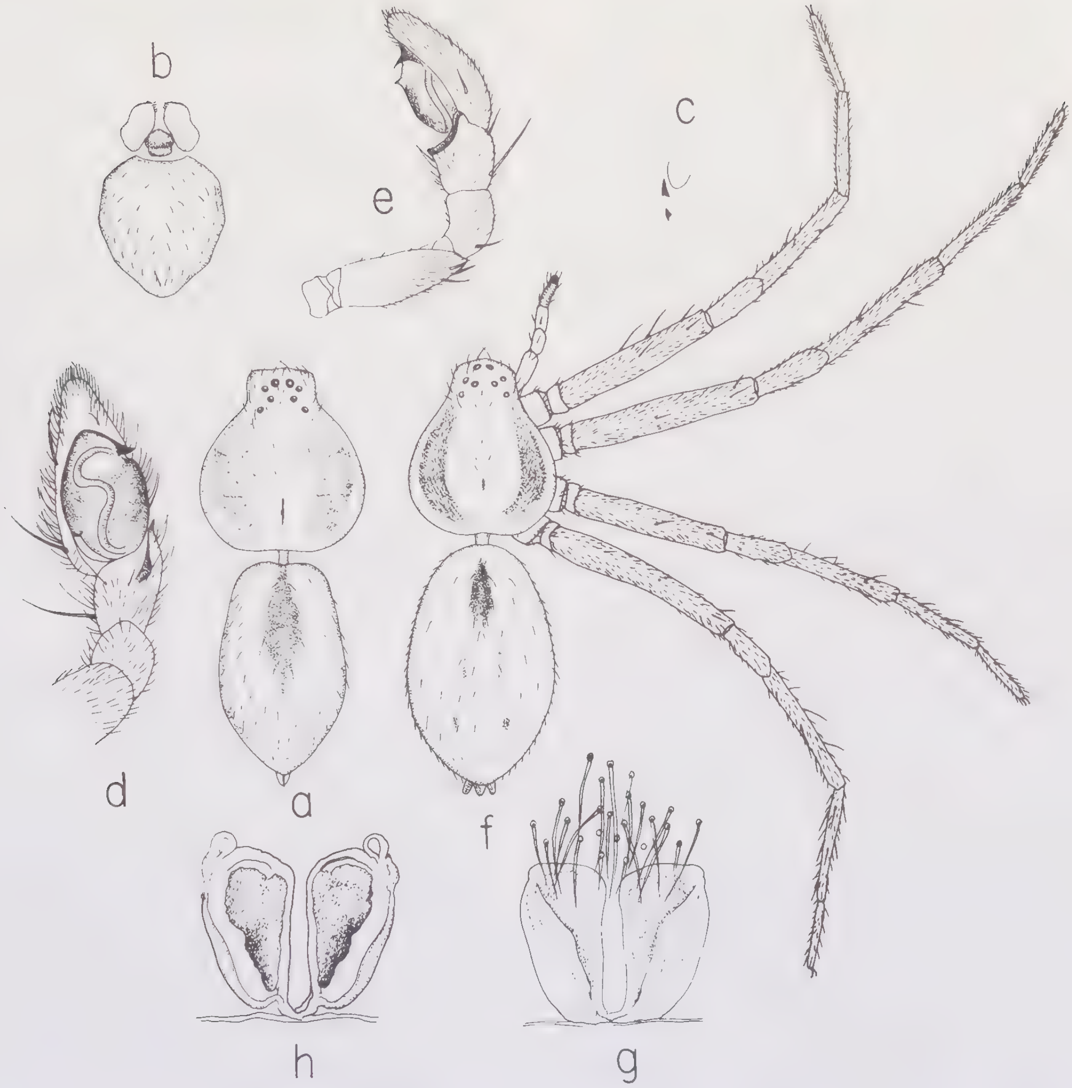

Fig. 158. Male *Thanatus parangvulgaris* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and ventral (d) and retrolateral (e) views of pedipalp; and female (f); and dorsal (g) and ventral (h) views of epigynum.

diameter. Sternum yellow and hairy, slightly longer than width, apical margin straight, laterals with very slight concavities opposite each coxa, posterior tip between coxae IV blunt. Labium yellow, wider (0.30 mm) than long (0.25 mm), basolateral one third straight and apical two thirds moderately oblique, terminating in a bluntly rounded distal end, base of labium straight. Maxillae yellow except brown outer lateral margins, slightly projected toward each other, scopulae yellow and located in the inner apical one half, extended to midhalf of the distal margin. Chelicerae yellow except brown connections in the inner base, apex diameter barely one half of the broad base, promargin with a long and large apical tooth and a small basal tooth, retromargin without teeth. Boss well developed. Legs moderately long, slender, and yellowish brown. Leg I with three pairs of ventral spines in tibia. Metatarsus I with two pairs in the basal one half. Tarsus and metatarsus I bear ventral scopulae. Tibiae and metatarsi II and III with similar number of ventral spines seen in leg I. Tibia IV bears six (three pairs) of ventral spines. Metatarsus IV with five spines, a pair each in the base and midhalf and only one in the apex. Tarsi two-clawed with claw tufts, each claw with 6–14 teeth. Leg formula 2413. Pedipalp almost as long as tibia I or III, embolus short and strongly tapered with a broad base, like *T. vulgaris* Simon, arising at distal end of tegulum. RTA short and erect with a blunt tip. Cymbium twice longer than broad.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.00	2.00	1.70	1.35	8.55
2	2.70	1.10	2.45	2.05	1.40	9.70
3	2.40	0.85	1.90	1.65	1.20	8.00
4	2.75	0.90	2.00	2.15	1.30	9.10
Pedipalp	0.70	0.30	0.35	-	0.60	1.95

Abdomen yellow-brown with brownish cardiac area, entire dorsum with fine hairs and moderately long setae. Venter yellow with very fine hairs. Anterior pair of spinnerets short but more robust than the widely separated posterior pair of spinnerets.

Female (Fig. 158f–h): Total length 4.80 mm. Cephalothorax 2.00 mm long, 1.95 mm wide, 1.50 mm high. Abdomen 2.80 mm long, 2.00 mm wide, 1.60 mm high. Cephalothorax yellow with a pair of broad longitudinal brown bands, cephalic area with long setae and thoracic area with only fine hairs. Eight eyes in two rows, similar to male. Eye diameter (mm): AME = ALE = 0.10, PLE = 0.09, PME = 0.08. Eye separation: AME–AME 1.6 times eye diameter, AME–ALE one fifth shorter than AME diameter, PME–PME 2.6 times AME diameter, PME–PLE 2.5 times AME diameter, ALE–PLE twice AME diameter. Median ocular quadrangle one fourth wider behind (0.44 mm), length 1.2 times longer than anterior width. Clypeus wide, 2.6 times AME diameter, with two transverse rows of 13 spines arranged in a set of seven along the anterior margin and six in the middle row. Sternum, labium, and maxillae similar to male in color and shape. Chelicerae reddish brown and stout basally, anterior tooth of promargin long and slender, unlike the small basal tooth. Retromargin bears no teeth. Legs moderately long and slender, all yellow except brown claws and claw tufts. Leg formula 2413.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.10	0.90	1.70	1.40	1.20	7.30
2	2.40	1.00	1.90	1.70	1.15	8.15
3	2.10	0.80	1.50	1.15	1.00	6.55
4	2.20	0.85	1.70	1.55	1.10	7.40
Pedipalp	0.80	0.40	0.35	-	0.60	2.15

Abdomen ovate, white except brown cardiac area and yellow-brown semierect setae. Venter similarly white with yellow area anterior to epigastric furrow and spinnerets. Anterior and posterior spinnerets similar to male. Dorsum of epigynum with a broad V-shaped black band. Median septum and atrium of epigynum both narrow, spermathecal organ small, located above junction of apicoretrolateral margin, spermatheca subovate, broadly rounded distally, and narrowly rounded proximally.

Etymology: Derived from its close similarity to *Thanatus vulgaris* Simon: in Tagalog 'parang' = similar, plus *vulgaris*.

Natural history: A male and a female were netted from rice panicles in irrigated rice in July.

Material examined: THAILAND: Prachinburi Prov., Prachinburi Rice Research Station, holotype male, 26 July 1989; one female paratype, same data as holotype.

Distribution: Thailand.

FAMILY EUSPARASSIDAE SIMON

(Huntsman or Giant Crab Spiders)

The giant crab spiders are indigenous to warm regions. Spiders in this family are mostly flat with legs I and II larger than III and IV and very similar to those of Clubionidae, in which they have been included by some authors. They have well-developed leg scopulae, two tarsal claws with claw tufts, trochanters are slightly notched, and the apical ends of metatarsi are furnished with a soft membrane. Eusparassids have laterigrade legs, run sideways as well as frontwards, similar to the thomisids. Only four species belonging to four genera have been found in the Philippines.

KEY TO THE EUSPARASSID GENERA AND SPECIES

1 Clypeus height more than one AME diameter; AME distinctly smaller than ALE; AME–AME separation longer than AME–ALE separation. 2

– Clypeus height usually less than one AME diameter; AE separation not as above. 4

2 Carapace as broad as long with a prominent yellow median longitudinal band continued to the entire length of abdomen (Fig. 159a); legs with light brown spots; sternum wider than long (Fig. 159b); tibia I and metatarsus I with ten and four ventral spines, respectively. .... *Heteropoda cyperusiria* n. sp. (Fig. 159a–d)

– Carapace longer than wide; sternum as long as or longer than wide. 3

3 Eye diameter: PLE > ALE > PME > AME; CL : CW = 1.17; femur II the longest leg segment (Fig. 160a); sternum as long as wide; epigynum with a median dome-shaped sclerotized and slightly raised hood (Fig. 160b). .... *Heteropoda garciai* n. sp. (Fig. 160a–c)

– Eye diameter: PLE > ALE > AME > PME or AME = PME = PLE > ALE; CL : CW = 1.03–1.04; tibia II in both sexes the longest leg segment; sternum longer than wide (Fig. 161a, 162b, 163a); male carapace with a broad V-shaped brown band (Fig. 161b); RTA strongly sclerotized and shallowly bifurcate apically; female carapace without V-shaped band (Fig. 164a); epigynum with a moderately long median longitudinal slit (Fig. 164d). .... *Heteropoda venatoria* (L.) (Figs 161a–f, 162a–f, 163a–f, 164a–d)

4 Metatarsus I the longest leg segment; apical one half of metatarsi I and II curved and entire segment finely

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45° angle (seen in ventral view) with a curved tip (Fig. 174d); embolus short, projected towards apex of cymbium. .. *Isopeda catmona* n. sp. (Fig. 174a–e).

14 Retromargin of chelicera with five teeth; cephalothorax, wider than long, reddish brown and abdomen gray, brown stripes anterolaterally (Fig. 175a); eye diameter: AME > ALE > PME = PLE, PE the smallest; clypeus height one half AME diameter; metatarsus I with three ventral spines; metatarsus I : tarsus I = 3.74; RTA well developed, well sclerotized, angulately indented subapically, with a blunt tooth-like apex (Fig. 175d); embolus coiled, borne on the apex of tegulum (Fig. 175e). .... *Isopeda pseudokumanga* n. sp. (Fig. 175a–e)

– Retromargin of chelicera with four teeth; cephalothorax as long as wide or wider than long. 15

15 Cephalothorax as long as wide; eye diameter: AME > ALE = PLE > PME; abdomen oblongate, yellow, mottled with brown to dark brown spots dorsally (Fig. 176a); sternum wider than long; metatarsi I and II black basally; metatarsus I : tarsus I = 4.04; RTA developed and blade-like (Fig. 176c). .... *Isopeda tuhodnigra* n. sp. (Fig. 176a–c)

– Cephalothorax wider than long; eye diameter: AME > ALE > PLE > PME; abdomen mottled brown with yellowish white markings dorsally, widest along apical one third (Fig. 177a); sternum longer than wide; metatarsi I and II without black base, uniformly reddish brown; metatarsus I : tarsus I = 3.64; RTA thumb-like with a blunt protrusion apicolaterally (Fig. 177c). .... *Isopeda bicolana* n. sp. (Fig. 177a–c)

Genus *Heteropoda* Latreille

Heteropoda Latreille, 1804. Nouv. Dict. Hist. 24: 135.

Heteropoda Latreille is a well-known genus with cosmopolitan distribution and currently contains about 124 nominal species. Members of this genus are good hunters, provided with powerful mandibles and strongly toothed fang groove. The distinguishing features of *Heteropoda* are the moderately high posterior of the nearly as wide as long cephalothorax with upper surface nearly flat; cephalic regions slightly depressed frontally; median ocular quadrangle longer than wide, wider behind than in front; PE row recurved, AE row straight, laterals larger than the medians and prominent; clypeus higher than the diameter of the anterior median eye; maxilla longer than wide, not crested; male pedipalp with a developed RTA, embolus short, tegulum without apophysis; ejaculatory duct prominent and thick; female epigynum with a pair of lobes, separated by a median piece; abdomen mostly longer than wide, dorsum with marks more prominent posteriorly.

Heteropoda cyperusiria new species
(Fig. 159a–d)

Description:
Female: Total length 5.40 mm, as broad as long, brown with a yellow longitudinal band a long thoracic fovea. Eight eyes in two recurved rows; AE row shorter than PE row. Eye diameter (mm): PLE = 0.28, ALE = 2.25, PME = 0.18, AME = 0.15. Eye separation (mm): AME–AME = 0.15, equal to AME, AME–ALE = 0.07, PME–PME = 0.18, as long as PME diameter, PME–PLE = 0.30. MOQ wider behind (0.53 mm) than in front (0.38 mm), posterior width shorter than length (0.63 mm). Clypeus height large, as broad as AME diameter. Sternum yellow, wider (1.55 mm) than long (1.45 mm). Labium brown, small, wider than long. Maxillae yellow, longer than wide, yellow scopulae of each maxilla towards each other. Chelicerae brown, promargin with three teeth and four retromarginal teeth. Legs brownish yellow with dark brown bands, moderately long, spinous, and distinct claw tufts. Femora I and II with two dorsal and three prolateral spines; tibiae I and II each with five pairs of ventral spines, III with three pairs and IV with five (2-2-1) ventral spines; metatarsi I and II each with two pairs of ventral spines. Leg formula 2413, femur II as long as tibia II and femur III as tibia III. Pedipalp yellow with a claw of seven teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.65	1.25	2.80	2.15	0.90	9.75
2	3.00	1.30	3.00	2.40	1.00	10.70
3	2.40	1.15	2.40	2.10	0.80	8.85
4	2.85	1.00	2.45	2.60	1.00	9.90
Pedipalp	1.05	0.70	0.75	–	1.30	3.80

Abdomen oblongate, dark red-brown with a broad median longitudinal yellow band, venter yellow, becoming darker laterallly and posteriorly. Spinnerets short, with yellow apices, bases close to each other. Epigynum moderately black, median area with squarish plate anterior to the epigastric furrow, and has a pair of ovoid orifices in the anterior of plate, separated by a sclerotized thin median arm of plate.
Etymology: Named after the plant it was collected from, *Cyperus iria* L.
Natural history: Vial tapped from the weed *C. iria* growing in an upland rice Philippine Council for Agricultural Research, Resources and Development (PCARRD) area, with an egg cocoon in July. The egg cocoon is yellowish white, spherical (5.5 mm in diameter), and 12 spiderlings emerged 16 days after it was collected from the field.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, holotype female, 10 July 1990, A.T. Barrion.
Distribution: Philippines.

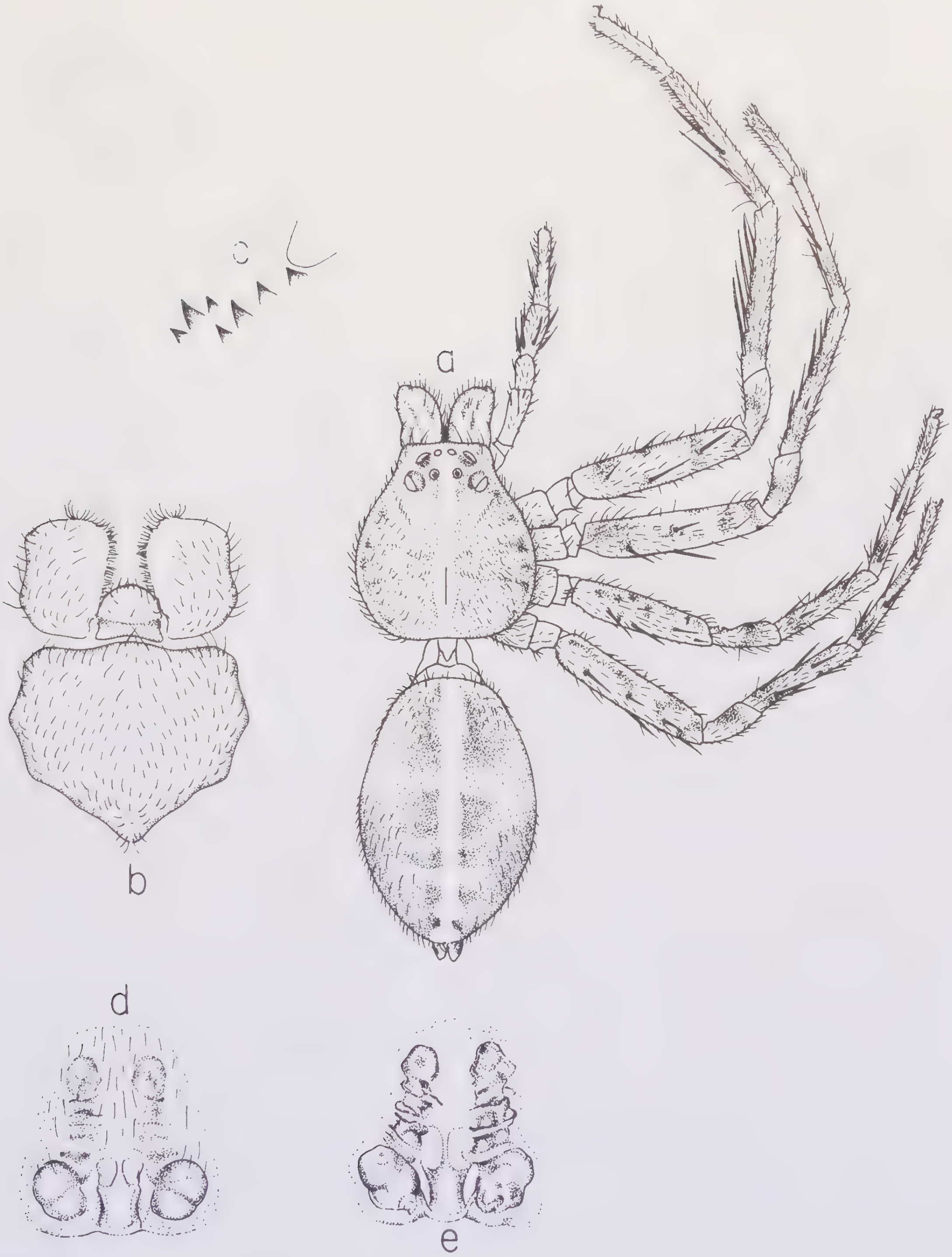


Fig. 159. Female *Heteropoda cyperusiria* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and dorsal (d) and ventral (e) views of epigynum.

Heteropoda garciai new species
(Fig. 160a–c)

Description:
Female: Total length 13.60 mm. Cephalothorax 5.40 mm long, 4.60 mm wide, 3.50 mm high. Abdomen 8.20 mm long, 5.50 mm wide, 5.00 mm high. Cephalothorax yellowish brown except black eye margins and reddish brown eye area. Eight eyes in two rows, both slightly recurved and AE shorter than PE row. Eye diameter (mm): PLE = 0.41, ALE = 0.39, PME = 0.30, AME = 0.23. Eye separation (mm): AME–AME = 0.18, AME–ALE = 0.06, PME–PME = 0.31, PME–PLE = 0.43. MOQ much wider behind (0.88 mm) than in front (0.59 mm), height slightly greater than posterior width. Clypeus height larger than AME diameter. Sternum yellow and heart-shaped, as long as wide, truncate anteriorly and tapered posteriorly. Labium yellow brown except yellow apex, wider (0.85 mm) than long (0.60 mm). Maxillae yellow, longer than wide and almost parallel to each other. Chelicerae vertical, yellowish brown, retromargin with four teeth in increasing size towards the anterior and promargin with three, mid-tooth the largest, and right chelicera with a black median lateral spot. Legs long and slender, yellow-brown, spines developed, metatarsi and tarsi with scopulae and tarsi with claw tuft. Femur I with two dorsal and three prolateral spines, II with three dorsal and three prolateral spines. Tibiae I and II each with eight (four pairs) ventral spines. Metatarsus I with two pairs of ventral spines, right metatarsus II with four (two pairs) and left with three (one pair plus one) ventral spine. Anteroretrolateral part of femur III with an ovoid black spot. Leg formula 2143. Pedipalp about as long as femur III, tarsal claw with six teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.60	2.25	5.20	4.90	1.45	19.40
2	6.20	2.30	5.90	5.00	1.75	21.15
3	5.30	2.00	4.20	4.05	1.35	14.90
4	5.80	1.70	4.60	5.20	1.65	18.95
Pedipalp	2.10	1.00	1.80	–	2.30	7.20

Abdomen ovoid, brown, longer than wide, dorsum without markings, venter yellowish brown except dark brown epigynum with a median dome-shaped sclerotized slightly raised hood, opening below hood.

Etymology: Dedicated to Mr Ben Garcia for his patience and help in collecting spiders.

Natural history: D-Vac-collected from upland rice in Siniloan, Laguna.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype female, 16 February 1905, B. Garcia.

Distribution: Philippines.

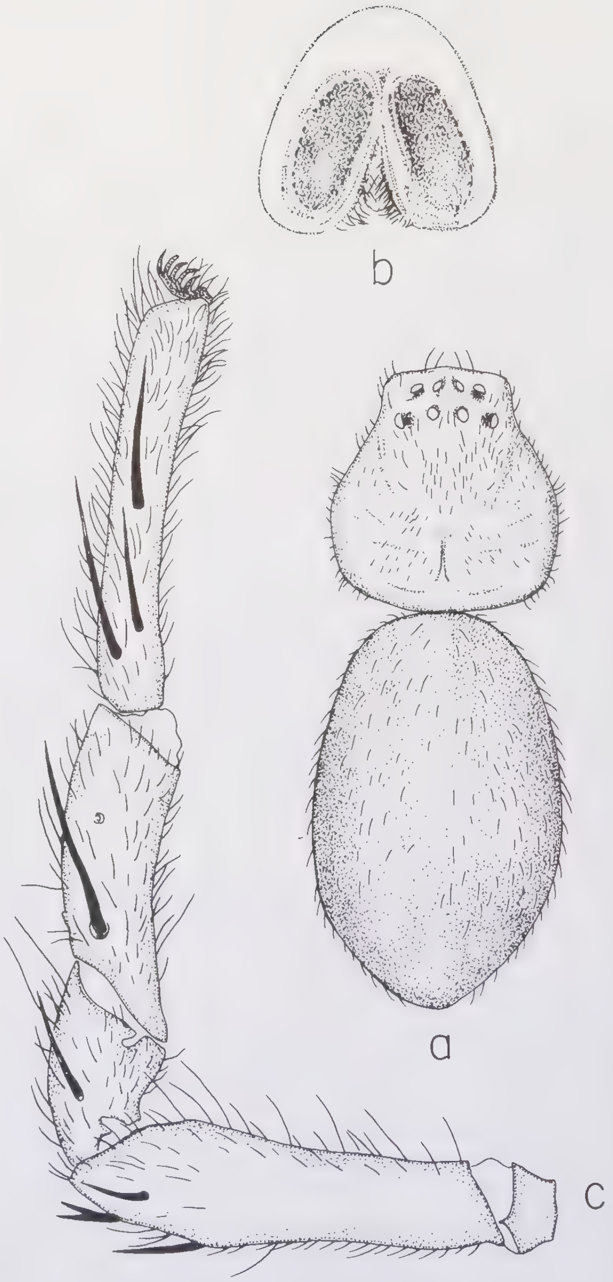


Fig. 160. Female *Heteropoda garciai* n. sp. (a); epigynum (b); and pedipalp with claw (c).

Heteropoda venatoria (Linnaeus)
(Figs 161a–f–164a–d)

Aranea venatoria Linnaeus, 1767. Syst. Nat. (XII. ed): 1035.

A. regia Fabricius, 1793. Ent. Syst. 2: 408.

A. pallens Fabricius, 1798. Suppl. Ent. Syst.: 291.

Heteropoda venatoria Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 135.

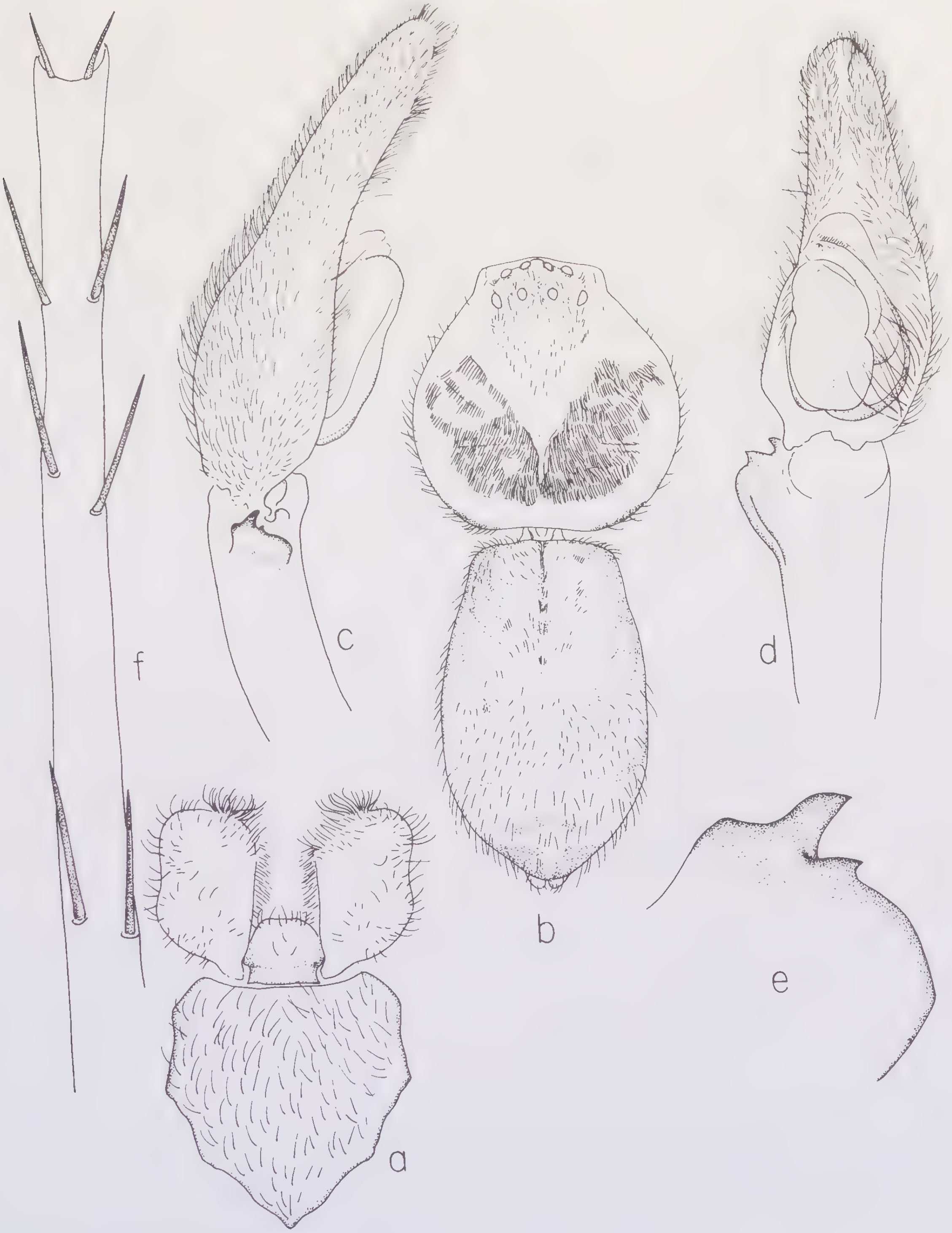


Fig. 161. Large, yellow, and v-banded male *Heteropoda venatoria* (Linnaeus), sternum, labium, and maxillae (a); body (b); retrolateral (c) and ventral (d) views of pedipalp; close-up of retrolateral tibial apophysis (e); and ventral view of tibia I (f).

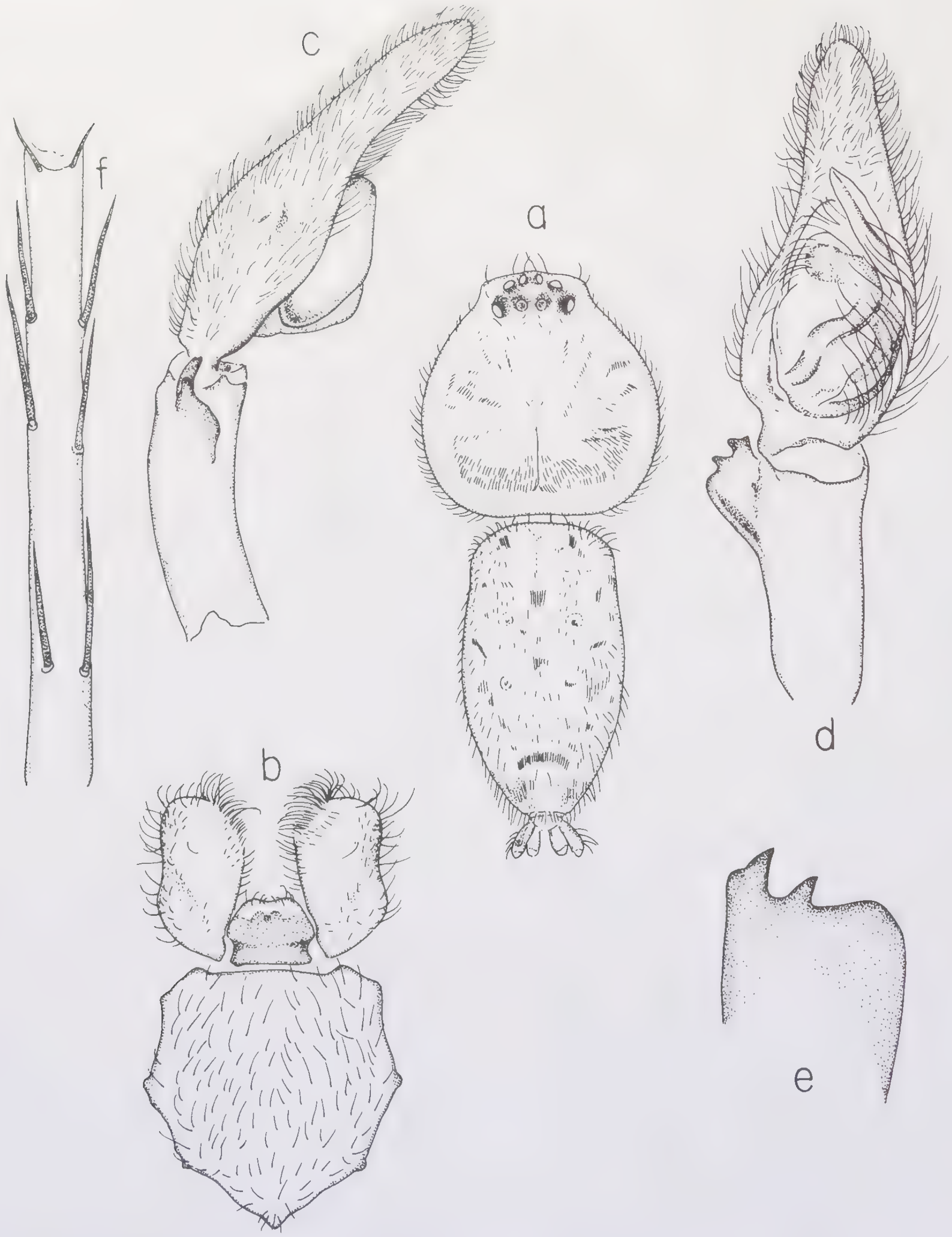


Fig. 162. Moderately large, brown, and lightly banded male *Heteropoda venatoria* (L.), body (a); sternum, labium, and maxillae (b); retrolateral (c) and ventral (d) views of pedipalp; close-up of retrolateral tibial apophysis (e); and ventral view of tibia I (f).

Thomisus leucosius Walckenaer, 1805. Tabl. Aran.: 36.
Thomisus venatoria Latreille, 1806. Gen. Crust. Ins. 1: 114.
Micrommata setulosa Perty, 1833. Delect. Anim. Artic.: 195.
Ocypete setulosa C.L. Koch, 1836. Die Arachn. 3: 40.
Olios leucosius Walckenaer, 1837. Hist. Nat. Ins. Apt. 1: 566.
Olios antillianus Walckenaer, 1837. Hist. Nat. Ins. Apt. 1: 568.
Olios colombianus Walckenaer, 1837. Hist. Nat. Ins. Apt. 1: 571.
Ocypete pallens C.L. Koch, 1838. Die Arachn. 4: 82.
Olios setulosus Walckenaer, 1841. Hist. Nat. Ins. Apt. 2: 474.
Ocypete murina C.L. Koch, 1845. Die Arachn. 12: 36.

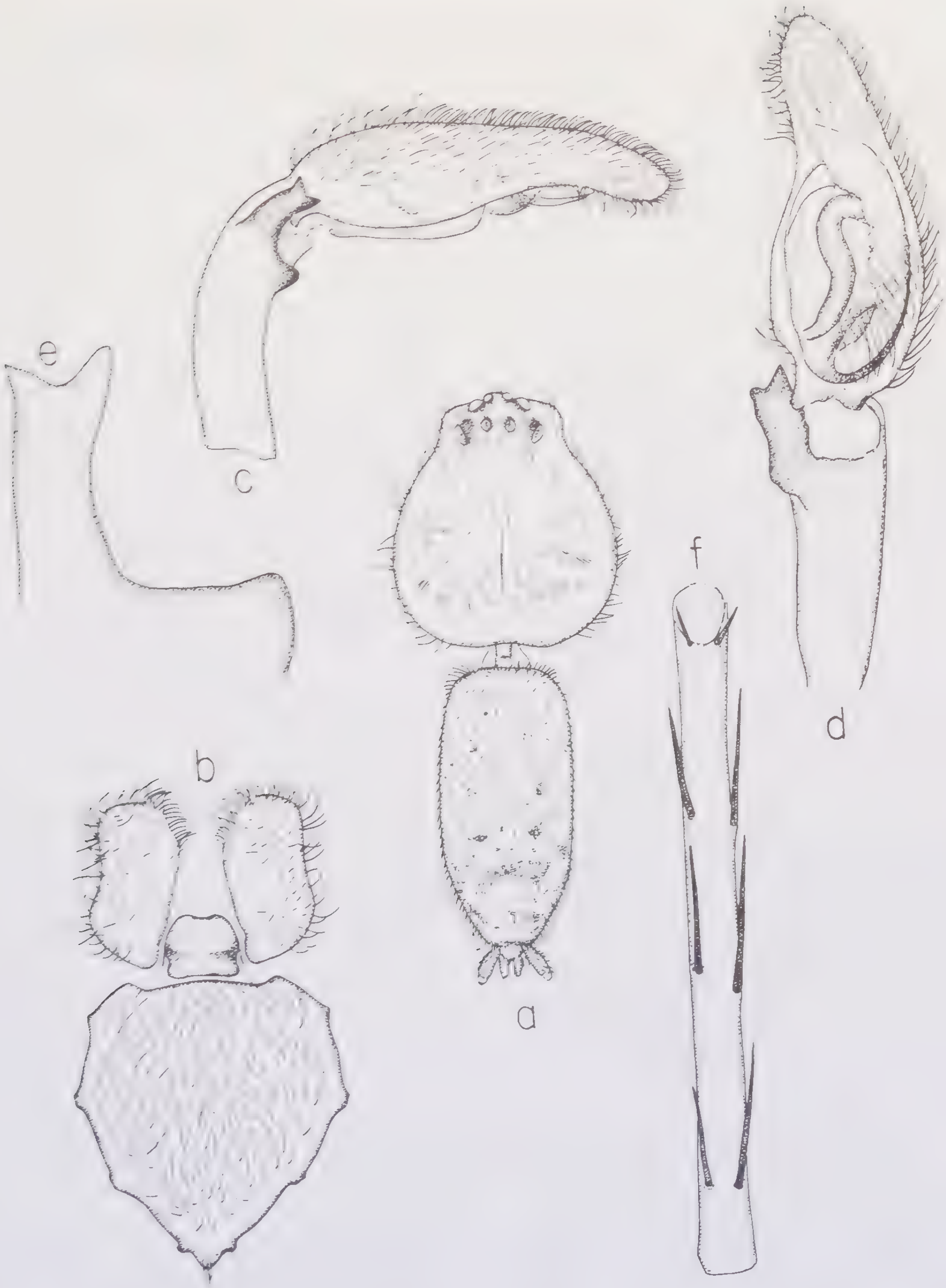


Fig. 163. Moderately large, brown, and unbanded male *Heteropoda venatoria* (L.), body (a); sternum, labium, and maxillae (b); retrolateral (c) and ventral (d) views of pedipalp; close-up of retrolateral tibial apophysis (e); and venter of tibia I (f).

Ocypete draco C.L. Koch, 1845. Die Arachn. 12: 44.
Olios javensis Doleschall, 1857. Nat. Tijdschr. Ned. 13: 428.
Olios gabonensis Lucas, 1858. Arch. Ent. 2: 407.
Olios zonatus Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 54.
Sparassus ammanita Dufour, 1863. Ann. Soc. Ent. France 4(3): 9.
Ocypete brunneiceps Giebel, 1863. Zeitschr. Ges. Naturw. 21: 320.
Olios leucosius Vinson, 1863. Aran. Reun. Mauric. Madagasc.: 98.

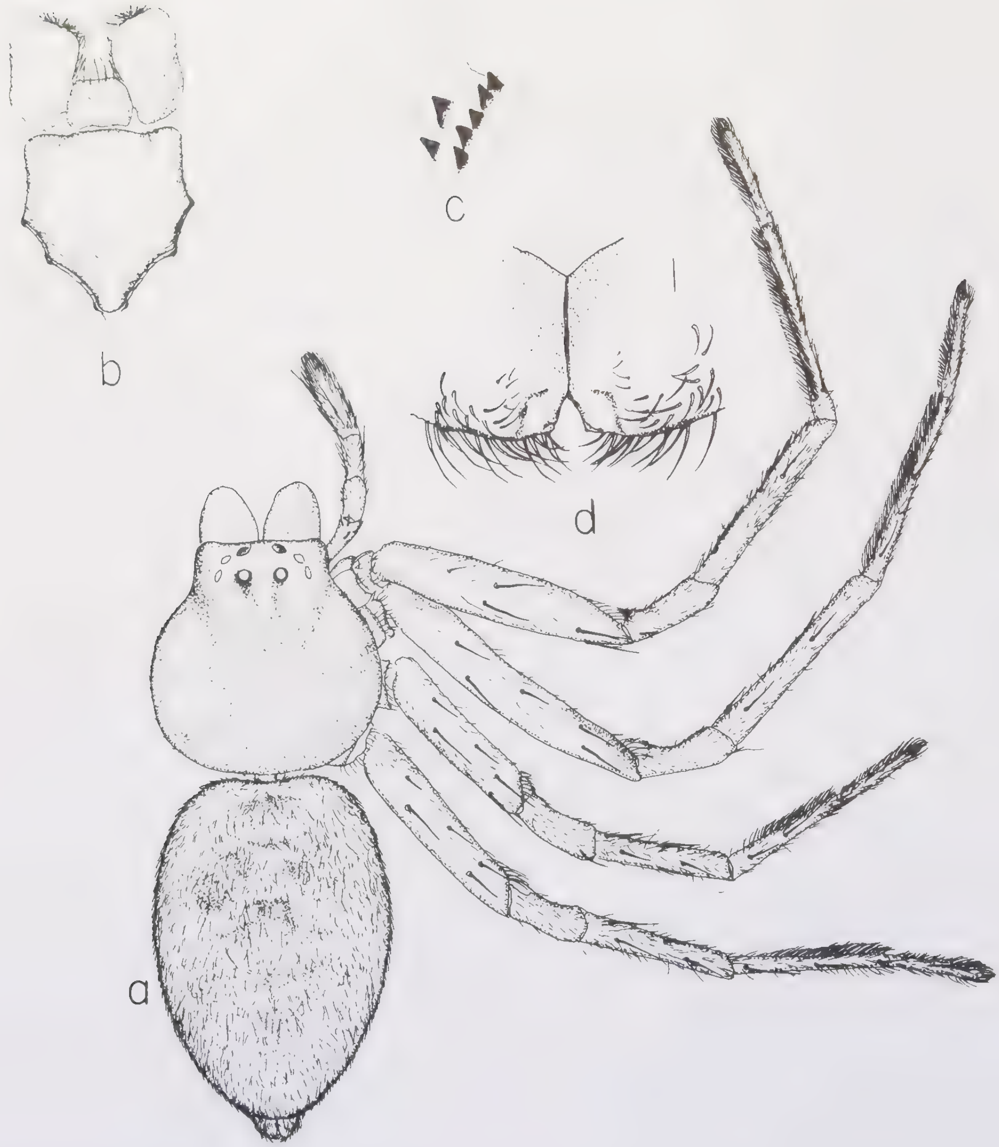


Fig. 164. Female *Heteropoda venatoria* (L.,) body (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and epigynum (d).

Olios regius Gerstacken, 1873. Gliedertier. Foun. Sansibar-Geb.: 482.
Sarotes regius C.L. Koch, 1875. Arachn. Austral. 1(2): 675.
Sarotes venatoria McCook, 1878: Proc. Acad. Nat. Sci. Philad.: 144.
Heteropoda venatoria Thorell, 1878. Ann. Mus. Civ. Genova 13: 191.
H. ferina Simon, 1887. Journ. Asiat. Soc. Bengal 56: 102.
H. ocellata Pocock, 1903. Ann. Mag. Nat. Hist. (11): 96.
H. venatoria Boesenberg and Strand, 1906. Abh. Senckenbg. Ges. 30(1–2): 273.

Redescription:
Male: Total length 25.49 mm. Cephalothorax 11.66 mm long, 10.83 mm wide, 2.83 mm high. Abdomen 13.83 mm long, 9.0 mm wide, 7.5 mm wide. Carapace broad, slightly flat dorsoventrally, yellow with a broad V-shaped black band medially and with black margins posteriorly. Sternum yellow with grayish brown hairs, longer (5.16 mm) than broad (4.58 mm). Eyes white, black along rims. AE row slightly recurved, PE row straight. Eye diameters: AME = PME = PLE > ALE. AME–AME separation just over AME diameter. PME–PME separation one PME diameter. ME closer to each other than to LE. Labium vertical, small, and yellowish brown. Maxillae yellow, as in coxae, with reddish brown

scopulae. Chelicerae yellow, hairy, and teeth reddish brown, three promarginal and four retromarginal teeth. Legs yellow except grayish black bases of setae, scopulae black, leg formula 2143.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	17.83	6.33	19.83	17.83	4.83	66.65
2	20.00	6.66	22.66	21.83	5.50	76.65
3	15.50	5.50	14.83	14.50	3.66	53.99
4	16.30	5.33	15.83	17.66	4.33	59.45
Pedipalp	3.20	1.70	2.00	3.10	10.00	20.00

Tibiae I and II each with four pairs of ventral spines and metatarsi I and II each with two pairs of ventral spines. Each tarsal claw of leg IV with 12 blunt teeth, tip of each claw long and curved. Labial palps yellow except black tibial apophysis, setae, hairs, and apices of each cymbium. RTA strongly sclerotized, rather long and concave in the inner one half and bifurcate at apex. Pedipalp's femora with two dorsal spines on the apical one sixth and two subdorsal on apical one third. Abdomen with median longitudinal black band on the apical one half, two pairs of dorsal white spots bordered by black hairs, and two transverse grayish bands posteriorly. Epigastric furrow prominently brown.

Female: Total length 28.99 mm. Cephalothorax 10.83 mm long, 10.83 mm wide. Abdomen 18.16 mm long, 11.33 mm wide. Cephalothorax reddish brown with thick short hairs, basal one tooth with a transverse yellow band. Thoracic groove, deep nearly as long as length of PE. Both eye rows recurved. Eye diameters: PLE > ALE > AME > PME. AME closer to ALE than to AME. AME–AME separation more than one half AME diameter. ALE–AME separation ca. one tenth ALE diameter. PME–PME separation less than PME diameter. PME–PLE separation greater than PLE diameter. PLE borne on slightly bulging areas. Leg formula 2143.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	12.66	5.83	13.66	11.66	2.83	46.64
2	14.33	6.00	15.50	12.33	4.33	52.49
3	14.33	4.83	10.83	9.66	3.50	43.15
4	14.33	4.50	11.66	11.66	4.33	46.48

Tibia I with four pairs of ventral spines, IV with three pairs of ventral spines each, prolateral and retrolateral with two spines each. Metatarsus IV with four pairs of ventral spines each, prolaterals and retrolaterals with three spines each. Abdomen grayish brown with two pairs of round spots dorsally. Epigynum with a slit-like median piece, widened posteriorly in the epigastric furrow.

Variation: Male's body length ranges from 15 to 25 mm; RTA shape moderately variable from base to tip; carapace V-band sometimes not distinct; spinnerets close together to diverging, and with V-shaped band posteriorly. Females range 20–29 mm in length. Dorsal spines on each femur of the labial palps vary from four to five.

Natural history: Collected from a 30-cm-high suction light trap installed in the middle of a ricefield bordered by coconut trees and fruiting bananas. The spider must have been carried by the wind into the trap. Adults are collected during April and immatures in August. Egg cocoons are light pink to cream dorsally, white ventrally, and usually 2.5 cm in diameter. An egg cocoon contains 78–204 eggs, which hatch between 2200–2400 hours. They are also common in houses, inside cabinets or drawers, and prey on one to three adult cockroaches, *Periplaneta americana* L. and *Blatella* spp., per night. A male was found inside a rolled banana leaf with an empty pupa of *Erionata thrax* (L.). Three males were collected from yellow pan traps set in upland ricefield in August.

Material examined: PHILIPPINES: *Luzon Is.*: Laguna Prov., Siniloan, Magsaysay Vill. one male , 22 August 1984, one immature, 10 August 1984, A.T. Barrion; Los Baños, IRRI Staff Housing near Mt. Makiling, one female, 10 April 1982, J.A. Litsinger; Liliw, Tuybaana Vill., one female, 18 April 1981, T.J. Perfect; *Mindanao Is.*: Misamis Oriental, Claveria, three males, 18 August 1989, E. Libetario.

Distribution: Cosmopolitan, India, Philippines (new record), Japan, USA.

Genus *Olios* Walckenaer

Olios Walckenaer, 1837, Hist. Nat. Ins. Apt. 1: 574.

Olios Walckenaer is a large genus, comprising about 262 nominal species, distributed mostly in the Australasian and Neotropical regions. The genus closely resembles *Heteropoda*, however, *Olios* species have anterior median eyes as large as or larger than the anterior laterals; clypeus lower than the diameter of an anterior median eye; and tibia I usually with only two pairs of ventral spines, none at the distal end of the segment.

Olios paalongus new species

(Fig. 165a–c)

Description:

Male: Total length 12.20 mm long. Cephalothorax 4.60 mm long, 3.50 mm wide, 1.60 mm high. Abdomen 7.60 mm long, 2.00 mm wide, 1.90 mm high. Cephalothorax moderately flat, yellow-brown except deep brown fovea, cephalic, parallel-sided, very distinct from the thoracic area, entire cephalothorax hirsute but marginal hairs much longer than the inner ones. Fovea long, extended as a thin longitudinal gray band posteriorly and triforked anteriorly. Eight homogeneous eyes in two rows, AE strongly recurved but much shorter than the straight PE (0.80 : 1.15 mm). Eye diameter (mm): ALE = 0.28, PLE = 0.20, AME = 0.18, PME = 0.15. Eye separation: AME–AME one half eye diameter, AME–ALE 0.22 eye diameter or one seventh ALE diameter, PME–PME twice PME diameter, PME–PLE as long as one PME or three fourths PLE diameter. LE separation

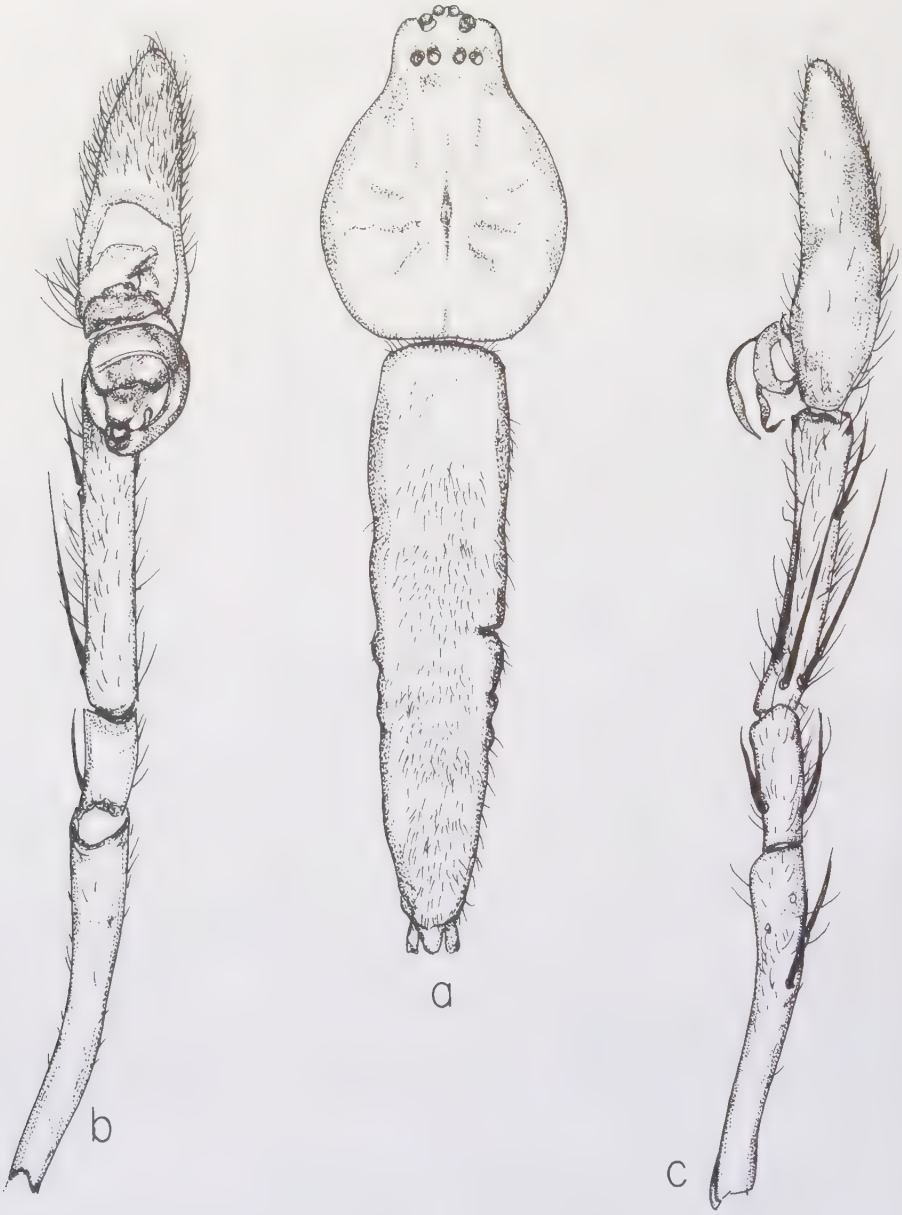


Fig. 165. Male *Olios paalongus* n. sp. (a); and ventral (b) and retrolateral (c) views of pedipalp.

a little longer than ALE diameter, as long as PME separation. Median ocular quadrangle narrower in front than behind (0.41 : 0.58 mm), length 1.82 times anterior width. Clypeus height small, a little less than one half of ALE diameter. Sternum yellow, longer (2 mm) than wide (1.8 mm), lateral margins more hirsute than the central part. Labium widest basally, wider than long, apical 0.6 brown and slightly swollen compared to the yellow flat basal part, lateral base of the swollen area constricted. Maxillae yellow, prominently longer than wide, dense scopulae on the anterior margin and thick brush-like hairs on the inner subanterior margin. Chelicerae moderately small, yellow, with brown fang and teeth, anterior tip with long hair dorsally and ventrally. Promargin with two teeth, a small basal tooth and a relatively large apical tooth. Retromargin with three teeth, small basal tooth and equally large apical and median teeth, median tooth closer to basal tooth than to the apical one. Space between retromargin and promarginal teeth with more than ten peg-like teeth. Legs long and slender, yellow except brown spines, and clothed with very fine hairs. Spination in femora I = II = 1-0-3-3, III = 2-0-3-3, IV = 1-0-2-3, tibia I = 4-4-4-3, II = 4-4-4-2, III = IV = 1-4-2-2; metatarsi I = II = III = IV = 0-4-2-2, metatarsi I and II spineless in the curved apical one half of its entire length, patella I with one prolateral spine subbasally, a pair of small oblique lyriform organs anterolateral to the spine, and with an R-shaped sclerotized ridge-like structure basoprolaterally, dorsal ridge twice longer than inner ridge but one fourth shorter than the ventral ridge, base of dorsal ridge with a small pore. Tarsi two-clawed, apical end of tarsi broad, scopulae thick, and each claw with numerous comb-like teeth. Leg formula 1243. Pedipalp yellow with brown spines. Cymbium hirsute, concave in basal one half. Embolus thin, narrow, and moderately short sigmoid-shaped, emanates from midanterior of cymbium and directed laterally along the side of tegulum. Retrolateral tibial apophysis acute apically, uniformly reddish brown, entire length about two thirds apical diameter of tibia.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	10.70	2.40	13.20	15.20	2.65	44.15
2	10.20	2.20	11.85	12.20	2.60	39.05
3	6.60	1.70	7.20	6.40	1.70	23.60
4	9.70	1.80	9.60	11.50	2.20	34.80
Pedipalp	2.70	1.10	2.00	–	2.25	8.05

Abdomen yellow, clothed with brown hairs, tapers towards the spinnerets, 3.6 times longer than width. Anterodorsal margin of abdomen more hairy than rest of body. Posterior spinnerets visible dorsally, longer and more slender than the short but more robust anterior spinnerets.

Etymology: Named after the very long legs (in Tagalog 'paa' means legs, plus long plus us).

Natural history: Two specimens were collected by sweep net in *Sporobolus*-dominated marsh field in October bordering irrigated ricefields.

Material examined: PHILIPPINES: *Mindanao Is*: Misamis Oriental Prov., Villanueva, Kalingagan Vill., holotype male, 7 October 1985, A.T. Barrion; one male (without abdomen), paratype, same data as holotype.

Distribution: Philippines.

Olios mahabangkawitus new species

(Fig. 166a–c)

Description:

Male: Total length 6.75 mm. Cephalothorax 3.00 mm long, 3.00 mm wide, 2.20 mm high. Abdomen 3.75 mm long, 2.40 mm wide, 2.50 mm high. Cephalothorax yellow except black eye margins and brown fovea, somewhat bifurcate at apex, as long as wide, cephalic narrower than thoracic area. Eyes in two rows, short AE row straight to slightly recurved and the longer PE row slightly procurved. Eye diameter (mm): AME = 0.23, ALE = PLE = 0.20, PME = 0.18. Eye separation (mm): AME–AME = 0.18, AME–ALE: 02.0, PME–PME = 0.35, PME–PLE = 0.28. MOQ narrower in front (0.60 mm) than behind (0.73 mm), height longer than anterior width but shorter than posterior width. Clypeus height moderately small, about 0.60 AME diameter (0.15 mm). Sternum yellow, heart-shaped, as broad as long. Labium yellow and wider than long. Maxillae yellow except whitish yellow apical one half and brown apical margin, longer than wide. Chelicerae yellow, vertical with reddish brown fang, retromargin bears three teeth, and two teeth in the promargin. Legs long and slender, yellow with gray patches, particularly at base of setae and spines, metatarsi and tarsi I and II with scopulae and claw tuft present. Femur I with two dorsal and two or three prolateral spines, tibiae I and II with four (2-2-0) ventral spines; metatarsi I with four (2-2-0) and II with two (1-1-0) ventral spines. Metatarsus I and tibia I subequal; metatarsus I : tarsus I = 3.07; leg formula 2143. Pedipalp as long as combined length of metatarsus III and tarsus III, tibial RTA strongly sickle-shaped, curved to the outside, with small hook at tip, tegular apophysis developed, and embolus very short; cymbium hirsute towards apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.45	1.70	4.30	4.30	1.40	16.15
2	4.90	1.90	5.00	5.35	1.60	18.75
3	3.55	1.35	3.10	3.00	1.15	12.15
4	4.25	1.40	3.80	4.05	1.25	14.75
Pedipalp	1.25	0.60	0.80	–	1.50	4.15

Abdomen ovoid, yellow, with brown specks almost forming two longitudinal rows in the middle and converging posteriorly. Venter and lateral uniformly yellow. Spinnerets yellowish brown, posterior pair most robust and close to each other basally and apically.

Etymology: Named after the long sickle-shaped tibial apophysis in Tagalog: 'mahabang' (long) plus 'kawit' (sickle-shaped) plus us.

Natural history: The specimens were collected from a Malaise trap set in the middle of an upland ricefield in June.

Material examined: PHILIPPINES: *Mindanao Is:* Misamis Oriental Prov., Claveria, Hinaplanan Vill., holotype male, 24 June 1986, A.T. Barrion; Claveria, Bangon-bangon Vill., two paratype males, 25 June 1986, A.T. Barrion.

Distribution: Philippines.

Olios perezi new species

(Fig. 167a–j)

Description:

Female: Total length 10.0 mm. Cephalothorax 4.83 mm long, 4.66 mm wide, 2.33 mm high. Abdomen 5.17 mm long, 4.25 mm wide, 4.33 mm high. Sternum longer (2.44 mm) than broad (2.20 mm), pointed basally and widest along coxa II. Cephalothorax yellow-brown and same color as legs and pedipalps. Pale eyes with black rings. Eye diameters (mm): AME = 0.34, ALE = 0.30, PME = 0.26, PLE = 0.24. AME closer to ALE than to each other, separated by 0.8 AME diameter. AE row recurved. PME closer to each other than to PLE. PME–PME separation two diameters. LE–LE separation one LE diameter. PE row slightly procurved. Clypeus one half AME diameter. Mandibles dark brown with two

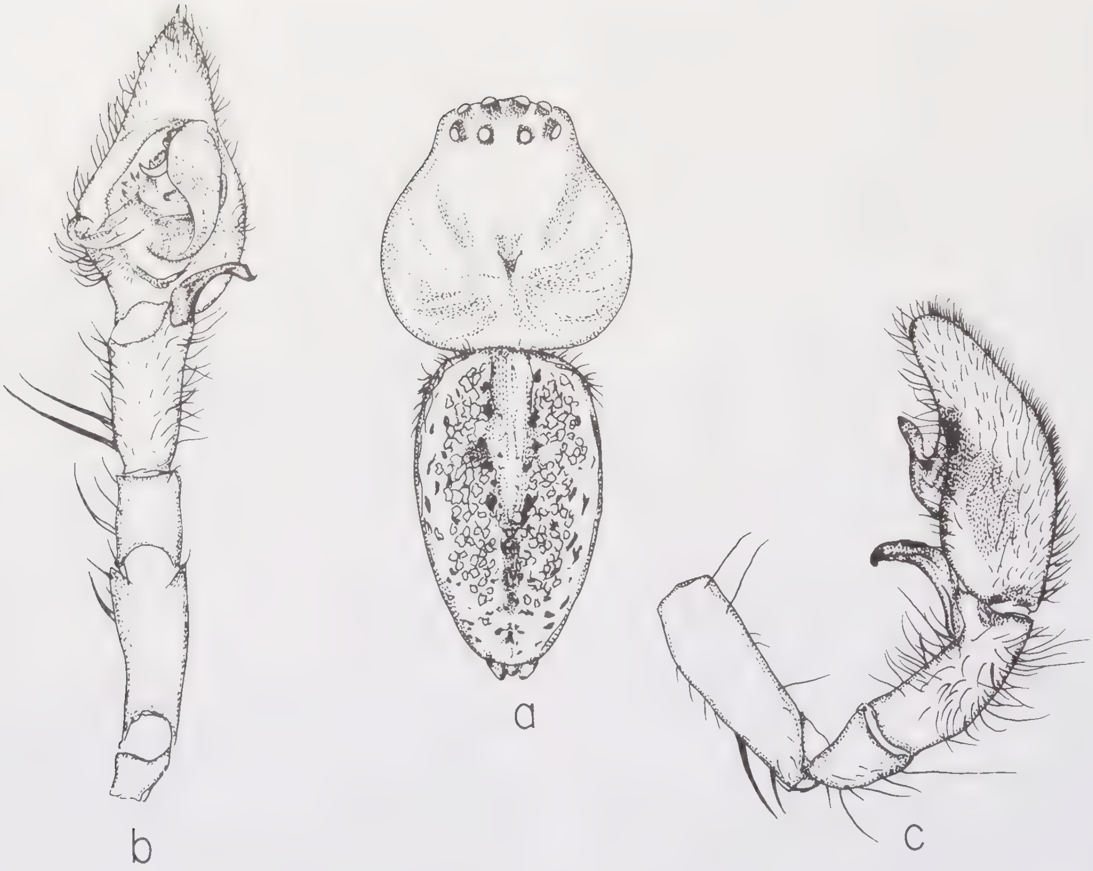


Fig. 166. Male *Olios mahabangkawitus* n. sp. (a); and ventral (b) and retrolateral (c) views of pedipalp.

promarginal and five retromarginal teeth. Tibia I with two pairs of ventral spines and two each of prolateral and retrolateral spines. Metatarsus I with two pairs of long ventral spines on the basal one fourth each. Metatarsus I: tarsus I = 2.60. Tarsal claw with 12 teeth on the legs and five on each labial palp.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.00	2.50	5.17	5.00	1.92	19.59
2	5.75	2.66	5.92	5.58	1.92	21.83
3	4.08	1.75	3.35	3.40	1.66	14.24
4	4.33	1.92	4.08	4.25	1.83	16.41

Abdomen uniformly yellow. Epigynum simple with a half-moon anterior and inverted V-shape anterior of epigastric furrows. Spermathecae moderately large and kidney-shaped.

Variation: Females range 10–12 mm in length. Thoracic groove long and prominent to short and pale. Retromarginal teeth range five to six.

Natural history: Unknown.

Material examined: PHILIPPINES: *Luzon Is.*: Batangas Prov. Lipa City, Marauoy Vill., holotype male, 23 August 1977, M. Perez; Tanauan, Janopol Vill., paratype female, 13 January 1987, A.T. Barrion; Laguna Prov., Liliw, Magdalena Vill., paratype female, 28 August 1984, A.T. Barrion.

Distribution: Philippines.

Genus *Thelcticopis* Karsch

Thelcticopis Karsch, 1884. Sb. Ges. Nat. Marburg: 64.

Thelcticopis Karsch is a small oriental genus of moderately large huntsman spiders with 28 nominal species. The important characters of the genus are the carapace longer than wide and convex laterally; posterior eye row procurved, lateral eyes close to one another; anterior medians larger than the laterals; MOQ narrower in front than behind; clypeus narrow; retromargins of chelicerae with five or six small teeth each; legs short, less laterigrade, leg I as long as or longer than II, anterior tibiae with five to seven pairs of spines; spinnerets supported on a membranous stalk, strengthened by a hairy chitin-

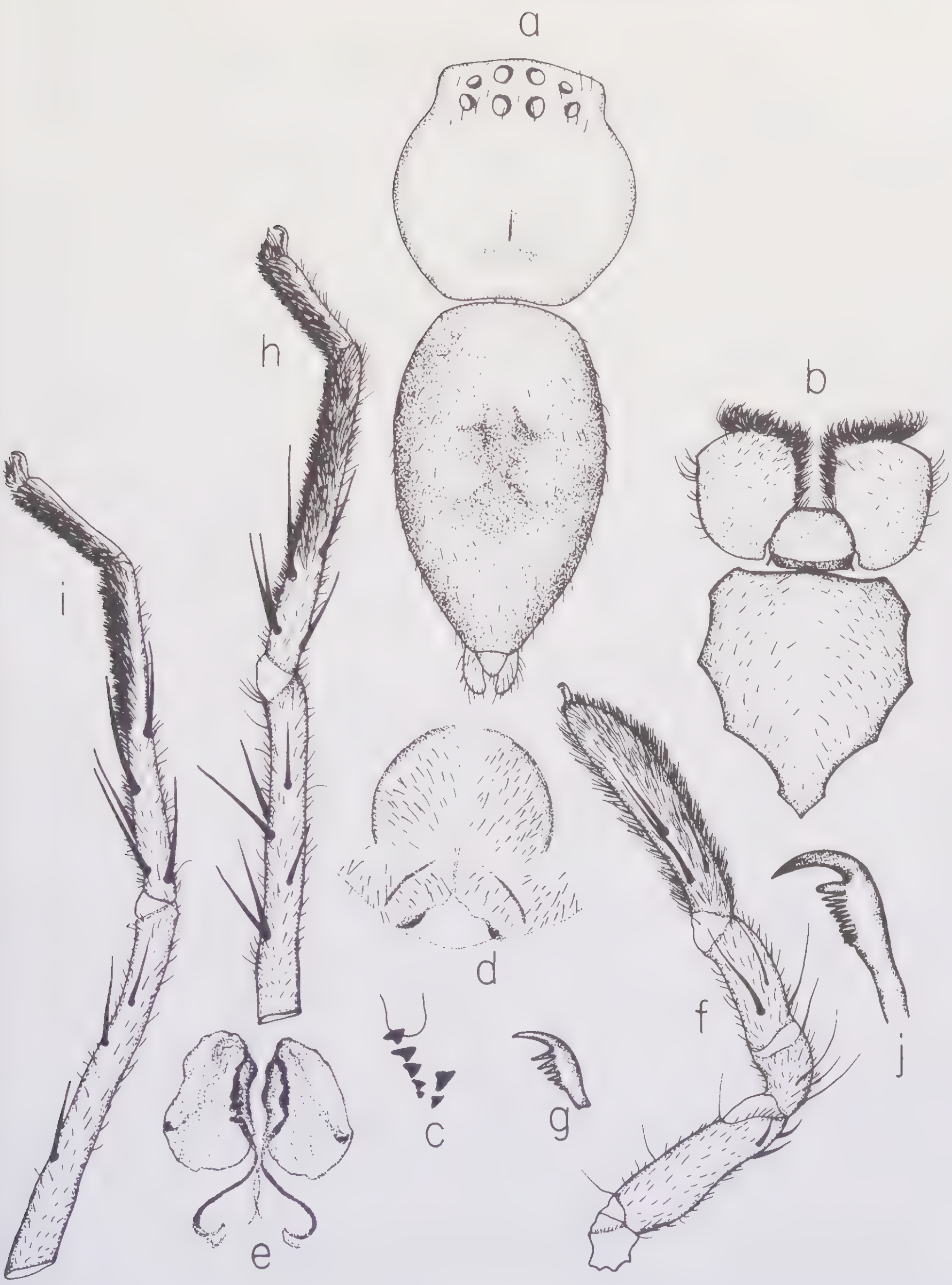


Fig. 167. Female *Olios perezi* n. sp (a); sternum, labium, and maxillae (b); cheliceral teeth with two in promargin (c); dorsal (d) and ventral (e) views of epigynum; pedipalp (f); claw teeth of pedipalp (g); apical three segments of legs I (h) and II (i); and tarsal claw teeth of leg I (j).

ous ring; abdomen longer than wide, usually widest medially, and tapers posteriorly, without prominent marks.

Thelcticopis huyoplata new species
(Fig. 168a–g)

Description:
Female: Total length 8.30 mm. Cephalothorax 2.70 mm long, 2.35 mm wide, 1.80 mm high. Abdomen 5.60 mm high. Cephalothorax brownish yellow with black eye margins, clothed with many setae, and cephalic area with well-defined boundary from thoracic area marked by setae. Fovea short and brown, in the posterior one fourth of the cephalothorax, and with blackish gray spots anterior to it. Margins of cephalothorax grayish brown. Eight eyes, all clear except slightly dark AME, recurved AE row shorter (0.95 mm) than slightly procurved PE row (1.10 mm). Eye area well marked, with setae, particularly posterior and laterals of PLE, inner side of ocular quadrangle, between PME and PLE, similar to those in clypeus. Eye diameter (mm): AME = 0.15, PLE = 0.13, ALE = 0.11, PME = 0.10. Eye

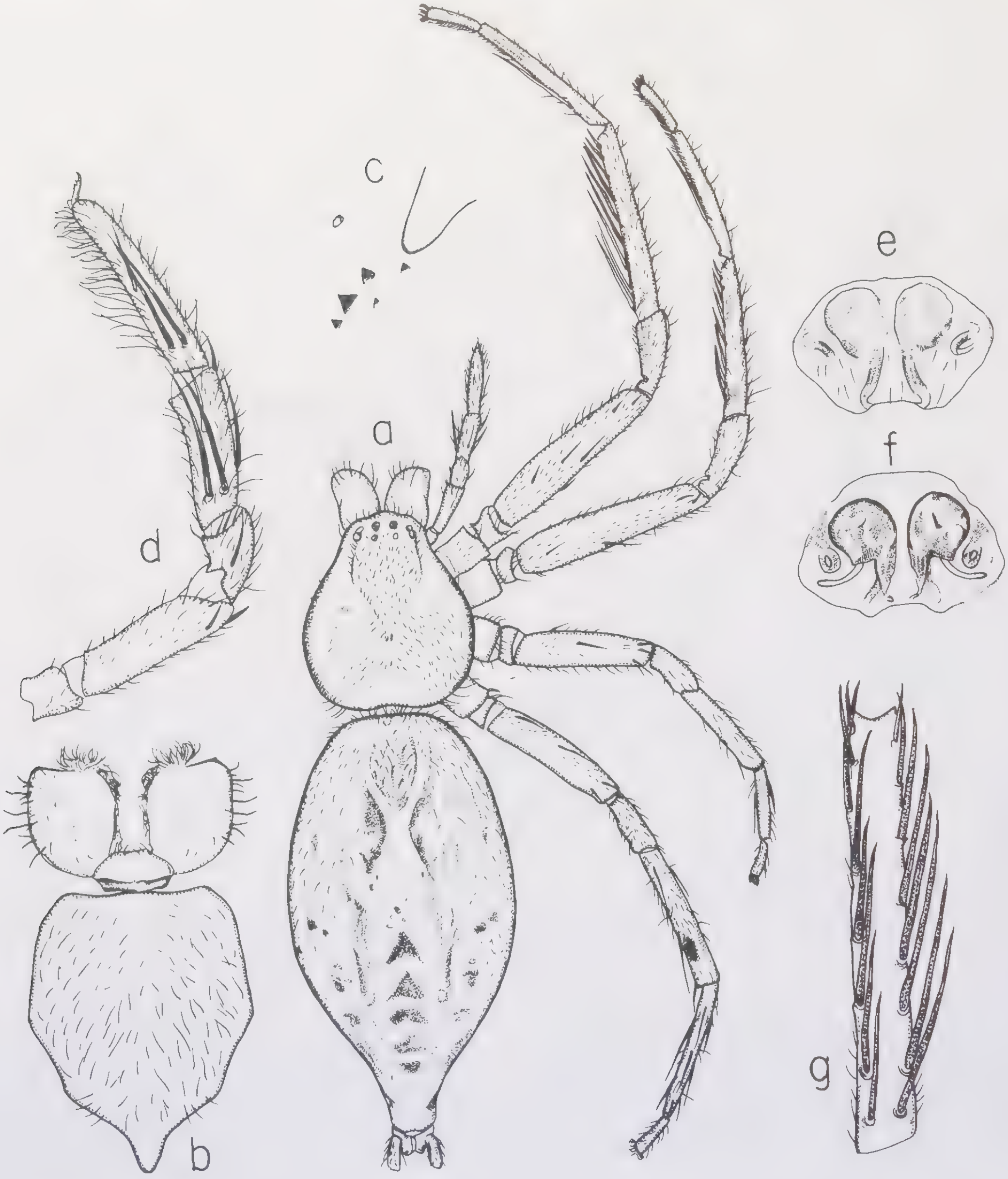


Fig. 168. Female *Thelcticopis huyoplata* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with three promarginals (c); pedipalp with a claw (d); dorsal (e) and ventral (f) views of epigynum; and ventral view of tibia I (g).

separation: AME–AME as long as AME diameter, AME–ALE 0.86 diameter of AME, PME–PME 1.86 diameter of AME, PME–PLE 1.7 AME diameter, ALE–PLE about 0.53 diameter of AME. Median ocular quadrangle wider behind than in front, both widths greater than length (0.38 mm). Clypeus height slightly shorter than AME diameter, and with 18 setae arranged transversely in two rows of six and 12 each. Sternum yellow and setaceous, longer (1.33 mm) than wide (1.15 mm), anterior margin straight and posterior tip pointed between coxae IV. Labium yellow in the slightly swollen apical two thirds and brown in the basal excavated one third, wider (0.43 mm) than long (0.28 mm), distal end slightly cleft and tip below midlength of endites. Maxillae yellow, longer than wide, inner part pale yellow with scopulae on the inner apicolateral to midapical margins, outer lateral margins straight and bearing longer setae. Chelicerae yellow-brown, hirsute except basal one third, promargin with three dark brown to black teeth and retromargin with two small widely spaced teeth. Legs moderately long and robust, yellow brown with gray patches in the middle of venter and laterals of patellae and subanterior and subposterior of tibiae. Coxa bears setae ventrally. Spination in femora I = 2-0-3-1, II = 2-0-2-1, III = 2-0-2-1, IV = 3-0-1-1, tibiae I = 0-17-0-0, II = 0-16-0-0, III = 0-6-1-0, IV = 0-6-1-0; metatarsi I = II = 0-2-0-2, III = 0-2-1-0, IV = 0-4-3-3. Ventral spines of tibiae in pairs and very long, some almost reaching tip of next anterior spine. Metatarsal spine long, greater than length of tarsus in each of legs I to III. Ventral scopulae dense in the metatarsi. Metatarsus I/tarsus I = 2.78. Tarsi two-clawed with dense claw tuft and markedly unequal teeth, one side with two teeth and other claw with at least eight teeth. Leg formula 2143. Pedipalp yellowish brown, longer than any of the femora, tibial and tarsal spination 2-0-3-2 and 0-0-3-2, respectively, tarsi single-clawed with four teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.58	1.30	2.75	1.75	0.63	9.01
2	2.68	1.30	2.70	1.83	0.65	9.16
3	2.15	1.00	1.75	1.38	0.53	6.81
4	2.50	0.93	2.08	2.20	0.78	8.49
Pedipalp	0.83	0.45	0.70	–	0.90	2.88

Abdomen ovate, dull yellow with brown irregular spots forming six or seven transverse rows towards the posterior, laterals each with four to six brown spots, venter dull light yellow-brown, reddish brown epigynum. Tapered abdomen towards the posterior with a transverse circular ring before ring of spinnerets. Anterior pair of spinnerets more robust though shorter than the cylindrical posterior pair, bases near each other except for a small inner basal constriction. Epigynum a broad plate without any distinct orifice, posterior margins in the tip of the epigastric furrow, widely excavated in the middle, forming small protrusions posteriorly in the elevated areas, lateral epigynal margins each with a cavity, anterior margin truncate.

Etymology: Named after the character of the epigynum (in Tagalog 'huyo' = excavated and 'plata' = plate).

Natural history: The holotype female was collected from a kerosene light trap set in the midfield of upland rice in August.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 29 August 1984, A.T. Barrion and R.T. Apostol.

Distribution: Philippines.

Thelcticopis kianganensis **new species**

(Fig. 169a–e)

Description:

Male: Total length 6.95 mm. Cephalothorax 3.05 mm long, 2.60 mm wide, 1.50 mm high. Abdomen 3.90 mm long, 2.10 mm wide, 1.85 mm high. Cephalothorax yellowish brown with black eye margin forming four longitudinal bands, right and left pair of ALE–PLE and AME–PME, thin blackish gray stripe posterior to PE row, gray lateral margins, four or five orange-brown striae emanating from a long longitudinal fovea. Cephalic areas lower than thoracic, the latter highest along fovea and widest between coxae II and III. Eight eyes in two recurved rows, AE more strongly recurved than PE row. AE row shorter (0.94 mm) than the PE row (1.11 mm). Eye diameter (mm): AME = 0.18, PLE = 0.13, ALE = 0.11, PME = 0.10. Eye separation: AME–AME 0.33 eye diameter, AME–ALE 0.72 diameter of AME, PME–PME 1.72 times AME diameter, PME–PLE 1.28 times diameter of AME, ALE–PLE 0.55 times diameter of AME. Clypeus height large, as long as one AME diameter. Median ocular quadrangle a little wider behind than in front, anterior width longer (0.48 mm) than length (0.45 mm). Sternum yellow and hairy, median area less hairy than the laterals, anterior end widely truncate, lateral margins opposite coxae straight to slightly curved, posterior tip narrowly truncate between coxae II and III and subglobular, as long as wide. Labium pale yellow in the apical two thirds and light brown in the basal one third, broadest in the colon boundary, distal margin convex or recurved and not reaching midlength of maxillae. Maxillae yellowish brown, outer lateral margin not constricted, inner margin without excavation and bearing scopulae in the apico-inner lateral junction. Chelicerae yellow, moderately small and hairy, bearing more than ten long hairs dorsal of the promarginal scopulae, retromargin with two small widely spaced teeth and promargin with three teeth. Legs brownish, becoming yellow-brown in the femora and tibiae, with gray bands before the apex and base, and claw tuft dense and black. Leg length II > I > III (note: specimen was collected without leg IV except femur). Spination in femora I = 2/3-0-3-3, II = 2-0-3-3, III = 2-0-4/3-3, IV = 3-0-3-2; tibiae I = 1-17-2-2, II = 1-16-2-2 III = 1-6-2-2; metatarsi I = II = 2-4-2-2, III = 0-4-3-3; metatarsus I/tarsus I = 3.33. Tarsi two-clawed, each claw with 10–15 teeth in leg I and claw tuft thick. Pedipalp longer than all femora except II. Tibia with one dorsal and three prolateral spines and about ten retrolateral setae. Retrolateral tibial apophysis leaf-like, greatly expanded, ITA strongly sclerotized and tapering apically, VTA broad and bifurcate apically; ventral and anterior tip of apophysis with spine sandwiching the base of subglobular and longer than wide cymbium. Embolus short and fine, conductor convex, moderately long, cylindrical, and dorsally rounded on both ends. Tegular apophysis nipple-like to triangular.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.15	1.50	3.75	2.65	0.68	11.73
2	3.55	1.40	3.60	2.73	0.73	12.01
3	2.85	1.13	2.35	2.30	0.65	9.28
4	3.20	–	–	–	–	–
Pedipalp	1.15	0.50	0.53	–	1.13	3.31

Abdomen ovate, clothed with dense setae, dull yellow with ca. ten U-shaped but interrupted brownish black spots, lateral with four or five broken longitudinal spots, venter dull whitish yellow with a pair of brownish

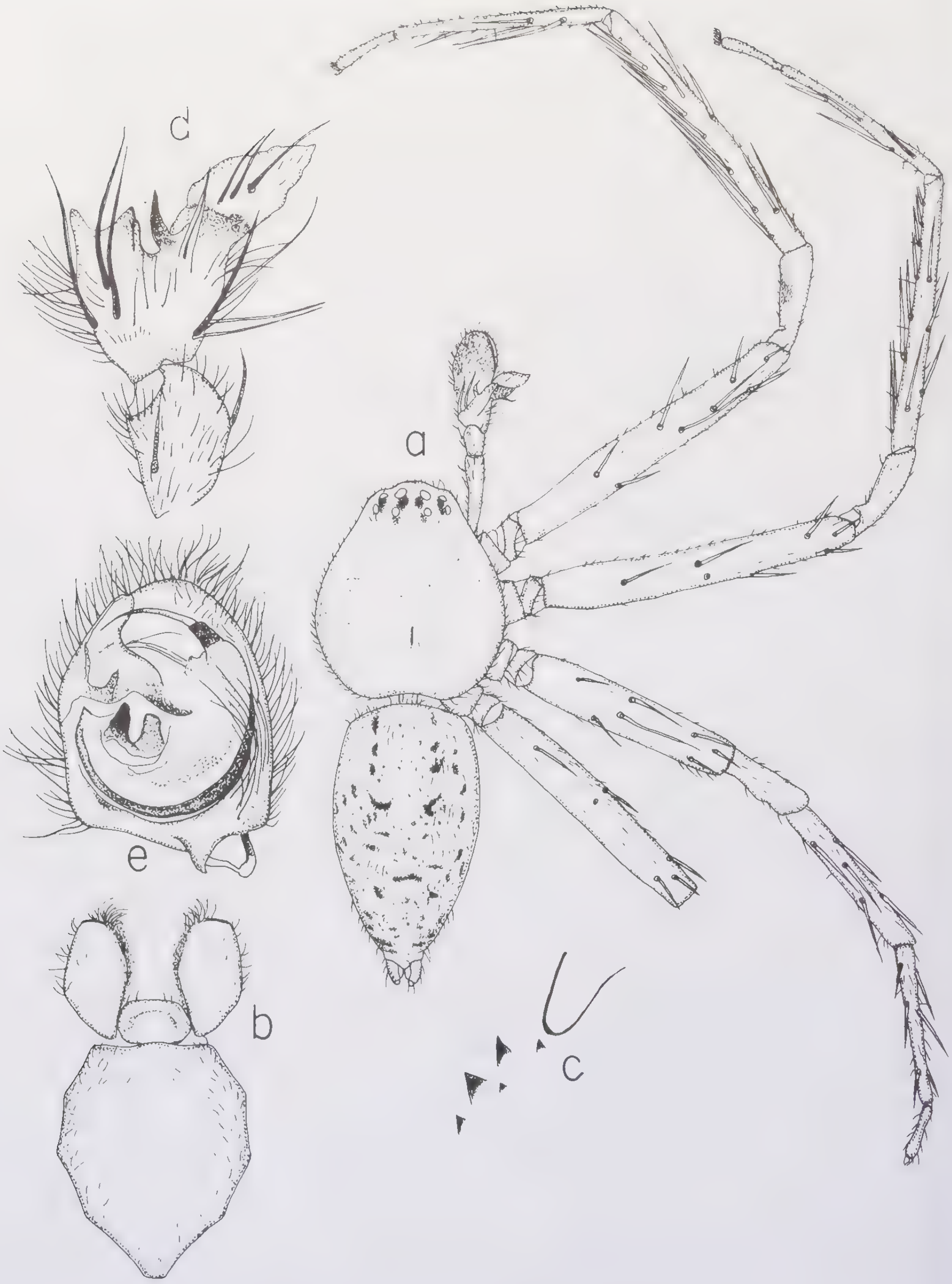


Fig. 169. Male *Thelcticopis kianganensis* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with two retromarginals (c); patella and tibia of pedipalp (d); and ventral view of cymbium (e).

yellow longitudinal stripes in the middle, converging subposteriorly in a blackish brown subposterior spot. Posterior spinneret, cylindrical and more slender than the robust anterior pair, both pairs equally long. Anal tubercle small and dome-shaped, less than the diameter of anterior spinnerets.

Etymology: Named after the type locality.

Natural history: The holotype male was collected from irrigated rice at maximum tillering in January.

Material examined: PHILIPPINES: *Luzon Is.*: Ifugao Prov., Lagawe, Nambahag Vill., holotype male (with incomplete leg IV), 9 January 1990, A.T. Barrion.

Distribution: Philippines.

Thelcticopis simplerta new species
(Fig. 170a–e)

Description:

Male: Total length 16.30. Cephalothorax 7.10 mm wide, 4.30 mm high. Abdomen 9.20 mm long, 4.50 mm wide, 4.40 mm high. Cephalothorax reddish and clothed with short, white fine hairs, attenuate along the laterals of the cephalic area and widest between coxae II and III. Fovea longitudinal, blackish brown, and located in posterior one ninth of the cephalothorax. Eight eyes, each with black margins, in two rows, shorter (2.60 mm) AE row

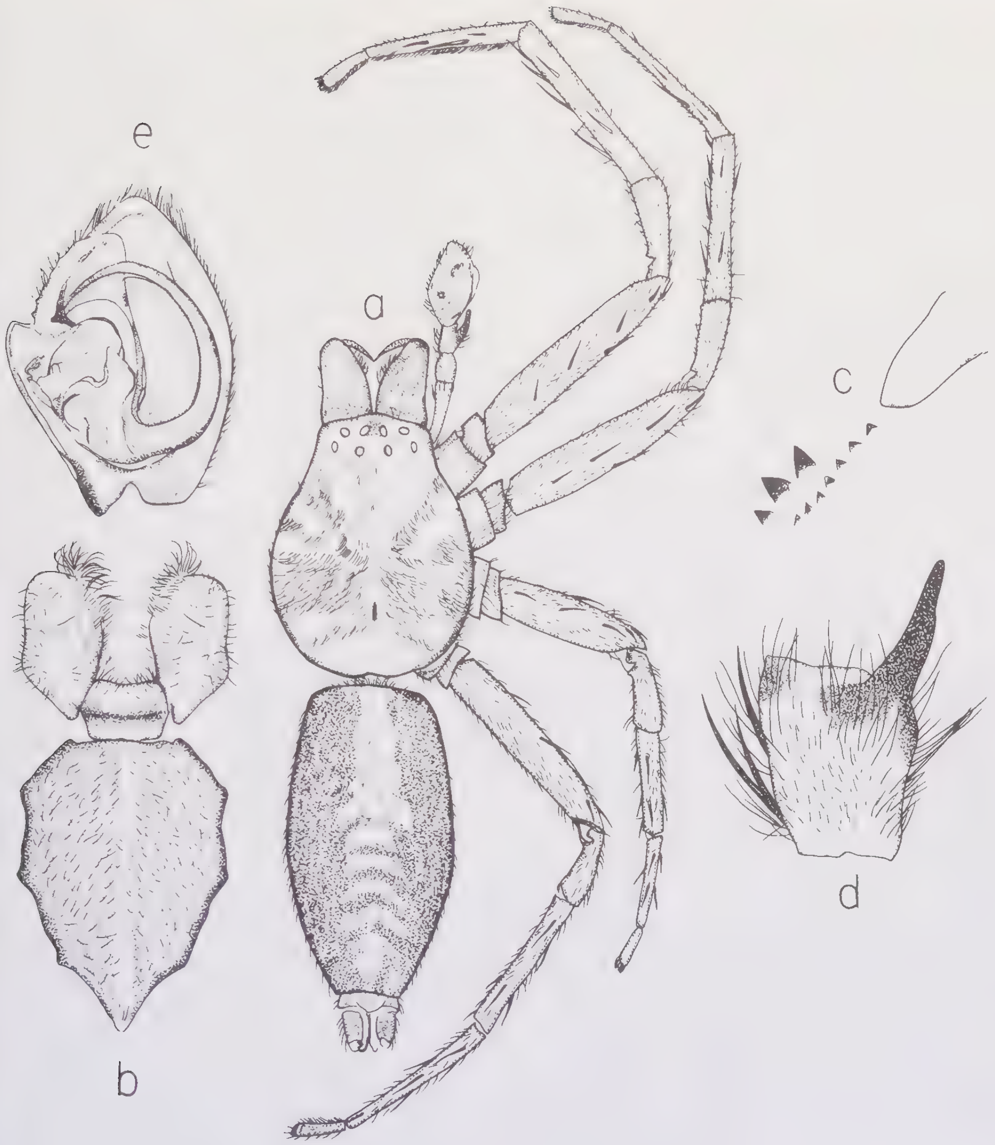


Fig. 170. Male *Thelcticopis simplerta* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); tibial pedipalp showing RTA (d); and ventral view of cymbium (e).

straight to very slightly recurved, PE row (3.10 mm) straight to very slightly procurved. Eye diameter (mm): AME = 0.43, ALE = 0.30, PME = 0.28, PLE = 0.25. Eye separation: AME–AME as long as 0.80 eye diameter and equal to AME–ALE and ALE–PLE, PME–PME 1.8 times diameter of AME, PME–PLE 1.9 times AME diameter. Median ocular quadrangle black medially between AME, 1.13 times wider behind than in front, anterior width longer (1.18 mm) than length (1.05 mm). LE borne on a slightly elevated area. Clypeus height moderately large, almost as long as AME diameter. Sternum longer (3.30 mm) than wide (2.45 mm), reddish except median slightly pale red and bears a whitish yellow longitudinal band at the pointed posterior end, anterior end straight except slightly elevated lateroapical ends, lateral margins opposite coxae moderately concave. Labium same color as maxillae with pale yellow distal margins, wider (1.05 mm) than long (0.75 mm), broadest at midhalf and excavated in the posterior one half, anterior margin moderately concave. Maxillae same color as labium except yellow inner apical one half with brown scopulae, outer lateral margins straight, and bases oblique. Chelicerae robust and reddish, swollen and hairy frontodorsally, and attenuate apically on the inner side, black inner lateral longitudinal ridge present, promargin bears scopulae, thicker anterior to the three promarginal teeth. Retromargin with seven teeth. Boss present. Legs brown, stout, and long. Spination in femora I = II = 2-0-3-3, III = 2-0-3-2, IV = 2-0-3-1, tibiae I = 0-10-2-2, II = 0-9-2-2, III = IV = 0-6-2-2; metatarsi I = 0-2-2-2, II = 0-1-1-0, III = 0-2-3-2, IV = 0-4-3-3. Metatarsus I/tarsus I = 3.44. Ventral scopulae in all tarsi and all metatarsi except their basal part. Tarsi two-clawed, each claw with 11 teeth, apical tooth rounded at tip and the largest. Leg formula 1423. Pedipalp nearly as long as combined length of patella and tibia of leg III, tibia hairy medially, retrolateral tibial apophysis long and thumb-like and as long as the diameter of tibia, prolaterally bears three setae, cymbium glove-like with a protrusion on one side at midhalf, embolus long and half-circular, emanating from the posterior of tegulum, and terminates before the lateral expansion of cymbium, conductor with a serrated anterior edge and its lightly sclerotized portion, widely grooved medially, widely blunt at its apex and sharply pointed opposite tip of embolus, base of embolus with light yellow thumb-like appendage and a bowl-like structure with a deep cleft. Tip of cymbium densely hirsute.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.50	3.50	6.40	5.50	1.60	23.50
2	6.20	3.30	5.70	5.10	1.40	21.70
3	5.50	3.00	4.50	3.90	1.30	18.20
4	6.90	2.60	5.10	6.20	1.70	22.50
Pedipalp	2.50	1.10	1.10	–	2.90	7.60

Abdomen long, grayish brown with yellow cardiac area, hairy, and bears five or six light yellow transverse bands posteriorly. Venter with a transverse H-shaped gray band anterior to the epigastric furrow and transverse ring. Colulus absent. Anterior spinnerets with a whitish membranous plate, basally separated by a brown hairy band, subtriangular and near each other basally, and as the more slender posterior spinnerets. Anal tubercle, hairy, dome-like, almost three times wider than long.

Etymology: Named after the simple long thumb-like retrolateral tibial apophysis (RTA) (simple plus RTA).

Natural history: The holotype male was collected from irrigated ricefield in June.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental, Villanueva, Looc Vill., holotype male, 25 June 1986, A.T. Barrion.

Distribution: Philippines.

Thelcticopis kaparanganensis new species

(Fig. 171a–c)

Description:

Male: Total length 14.10 mm. Cephalothorax 6.00 mm long, 4.85 mm wide, 4.00 mm high. Abdomen 8.10 mm long, 3.95 mm wide, 3.80 mm high. Cephalothorax brown, clothed with short, white fine hairs, light reddish brown in the cephalic area, with moderately long setae posterior to PME–PLE and clypeus, border of cephalic to the thorax black, longitudinal fovea black and inverted Y-shaped. Cephalic attenuate anteriorly, subparallel-sided and thoracic area widest between coxae II and III. Posterior of fovea down to the posterior of cephalothorax bears no white hairs, similar to *T. simplerta*. Eight eyes in two rows, all clear, slightly recurved AE row shorter (1.80 mm) than the slightly procurved PE row (2.30 mm). Eye diameter (mm): AME = 0.33, ALE = 0.24, PME = PLE = 0.23 Eye separation (mm): AME–AME 0.75 eye diameter. AME–ALE 0.6 diameter of AME. PME–PME 1.52 times diameter of AME. PME–PLE 1.7 times AME diameter. ALE–PLE as long as one diameter of AME. LE borne in a slightly bulging area. Median ocular quadrangle narrower in front (0.90 mm) than behind (0.95 mm) and anterior width longer than length (0.78 mm). Clypeus height small, a little less than one half diameter of AME. Sternum longer (2.80 mm) than wide (2.15 mm), yellowish brown medially and brown along margins, anterior and lateral margins straight except moderately convex coxae IV, posterior end rounded between coxae IV. Labium brown in the excavated posterior one half and yellow-brown in the anterior one half with a straight or slight median cleft, wider (0.80 mm) than long (0.60 mm) and below midlength of maxillae. Maxilla yellow in the oblique apical one half and brown in the rest, outer lateral sides almost straight, apico-inner area of the inner side with a brown scopula before the edge and blackish brown in the midtop. Chelicerae strong and robust, hairy frontodorsally, attenuate, and with scopulae apically in the inner part. Promargin bears three black teeth, basal one on tip of the longitudinal ridge and close to the subbasal tooth, apicala tooth markedly distant from the subbasal tooth. Retromargin with five small teeth. Legs long, slender, moderately robust, and moderately hairy, same color as cephalothorax except darker patellae and black bands or the apices of tibiae and metatarsi. Spination in femora I = 1-0-3-3, II = 2-0-3-3, III = 2-0-3-2, IV = 1-0-3-1; tibiae I = 0-11-2-2, II = 0-9-2-2, III = 0-6-2-2, IV = 1-6-2-2; metatarsi I = II = 0-2-2-2, III = 0-3-3-3, IV = 0-4-3-3. Ventral scopulae present in tarsi and most of metatarsi. Metatarsus I/tarsus I = 3.52. Tarsi two-clawed with dense claw tuft and long hairs beyond claw tuft. Leg formula 1423. Pedipalp longer than combined length of metatarsus I and tarsus I or femur I alone; femur with three dorsal and one each of prolateral and retrolateral spines, tibia with one dorsal and three prolateral setae. In ventral view, apical diameter of tibia three times that of posterior diameter. Retrolateral tibial apophysis finger-like, with a thin and broad structure and with an obliquely truncate to slightly concave apex representing the thumb, and a tooth-like little finger ITA very close to the base of RTA. Bases of RTA and ITA with four long modified setae. Embolus short with a broad base, occupies apical one half of cymbium, and constricted almost at midlength, obliquely cut before apex, thus appearing bifurcate. Tegulum with a thin, flat, short, and blunt structure at base of embolus, posterior to embolar constriction, and a cup-like plate with wide and deep groove medially posterior to the conductor base. Conductor towards the retrolateral side, semicircular with a wide inner groove, and a cleft in its posteroretrolateral side.

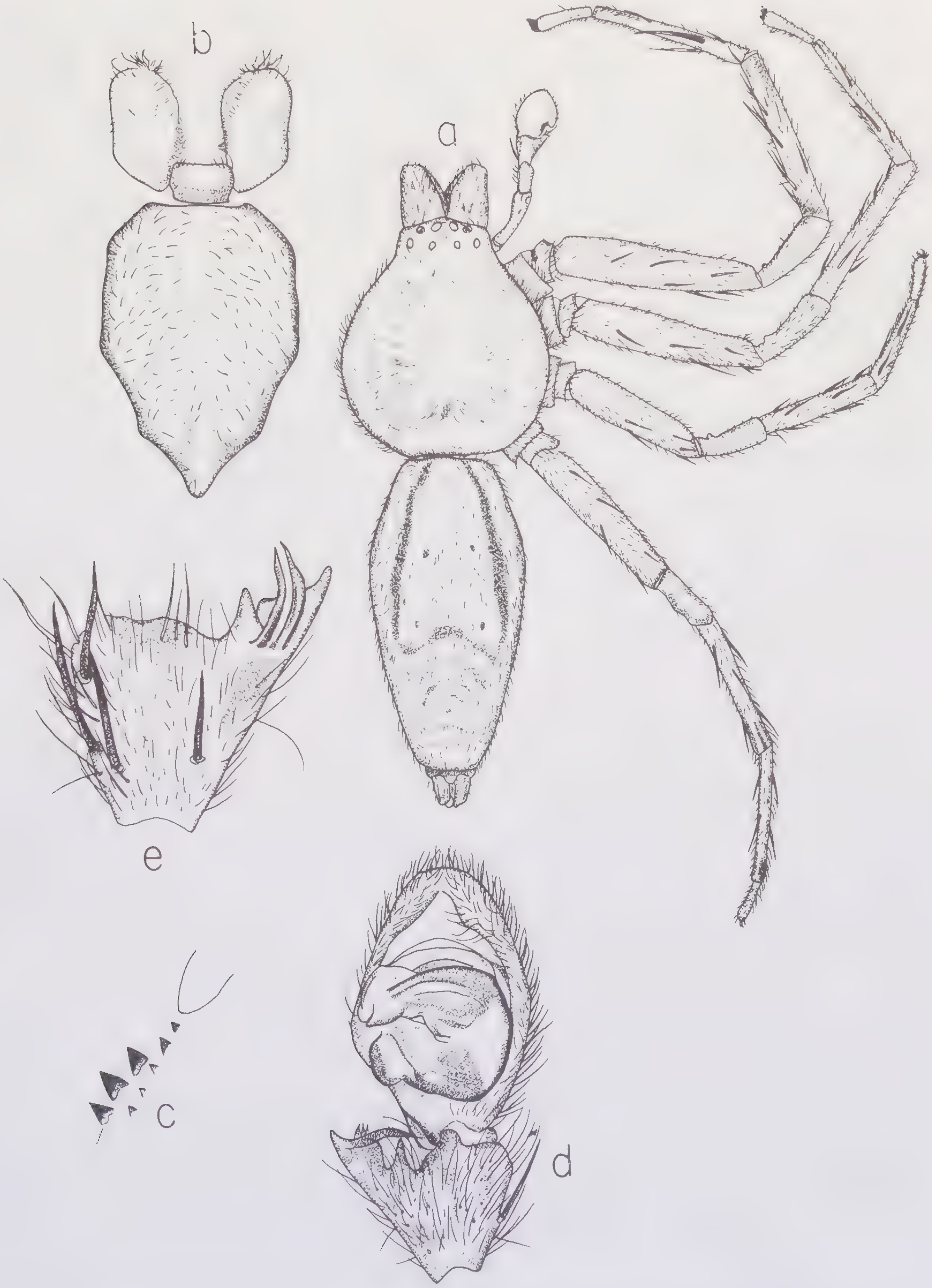


Fig. 171. Male *Thelcticopis kaparanganensis* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with five retromarginals (c); ventral view of pedipalp (d); and tibia showing apophysis (e).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.60	2.90	5.40	4.40	1.25	19.55
2	5.50	2.65	4.90	4.23	1.33	18.61
3	4.60	2.15	3.70	3.30	1.05	14.80
4	5.65	2.05	3.00	5.20	1.40	19.30
Pedipalp	2.00	0.95	1.00	-	1.83	5.78

Abdomen gray-brown, with yellow cardiac area enclosed by a semitriangular band and seven or eight widely spread inverted V-shaped stripes in the posterior one half and with a transverse circular ring posteriorly before the spinnerets. Venter with an H-shaped transverse brown band anterior to the epigastric furrow, yellowish brown book lungs, and three broad longitudinal chocolate-brown bands, contiguous at both ends, between furrow and ventral part of the transverse circular ring. Anterior spinnerets as long as the posterior but more robust and set closer to each other basally, with whitish thin membrane basally divided by a narrow longitudinal brown hairy band. Anal tubercle subtriangular, its base diameter twice that of height.

Etymology: Named after type locality.

Natural history: The holotype male was collected from the panicle of Sinandomeng upland rice in September.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan-Famy, Kaparangan Vill., holotype male, 23 September 1985, M. Perez.

Distribution: Philippines.

Genus *Isopeda* L. Koch

Isopeda L. Koch, 1875. Die Arachn. Austral. Austral.: 678.
Isopeda Thorell, 1881. Ann. Mus. Civ. Stor. Nat. Genovia 17: 293.
Isopeda Gravely, 1931. Rec. Ind. Mus. 33: 238–239.
Isopeda Main, 1964. Spid. Austral.: 72–74.

Isopeda L. Koch is a moderately large huntsman or giant crab spider endemic to the Australasian region and comprises about 44 nominal species. The genus is separated from its relatives by the low to moderately flat carapace; equally spaced anterior eyes; PME–PME ⩾ PME–PLE; PE recurved and seldom straight; clypeus height barely reaches one half AME diameter; chelicerae ovoid and glabrous with short blunt to moderately clubbed setae; legs long, I reaches midlength to distal end of metatarsus II when stretched along side of leg II; coxa I usually with comb-like set of short blunt-tipped setae; femur and coxa I of pedipalp occasionally with short ventral bristles; pedipalp of male with a large, often laterally flattened RTA, coiled embolus constricted towards tip, embolar base with large distal flange; female epigynum ovoid, lateral rims usually straight and diverging gradually from narrowly emarginate with bulging anterior margin of epigynum; spermathecal sacs relatively long and elbow-shaped; abdomen usually with four pairs of black spots dorsally and median pair subcontiguous.

Isopeda sungaya new species
(Fig. 172a–f)

Description:

Male: Total length 13.40 mm. Cephalothorax 6.00 mm long, 6.10 mm wide, 3.50 mm high. Abdomen 7.40 mm long, 5.00 mm wide, 3.70 mm high. Cephalothorax brownish yellow except brown to red-brown longitudinal fovea and eye area and black eye margins. Cephalic distinct from thoracic area. Fovea with three or four brown-red striae radiating from it. Eight eyes, all clear, in two rows, slightly recurved to straight, AE row one fifth shorter than slightly procurved PE row. Eye diameter (mm): AME = ALE = PLE = 0.30, PME = 0.20. Eye separation: AME–AME as long as one eye diameter, AME–ALE one sixth smaller than one eye diameter, PME–PME twice AME eye diameter, PME–PLE slightly over three times AME diameter. Median ocular quadrangle slightly narrower in front than behind, length shorter than posterior width. Clypeus height one third smaller than one AME diameter. Sternum yellowish brown with denser whitish yellow hair towards the margin, lateral margins opposite coxae slightly concave, apical margin moderately straight, posterior margin shortly tapered between coxae IV. Labium reddish brown except yellow convex distal margins with black hairs and wider than long (0.65 : 1.10 mm). Maxillae one third longer than wide (1.50 : 1.00 mm), yellow in apical one half and red-brown in basal one half. Distal margin of maxillae with brown scopulae. Chelicerae reddish brown, robust, with six teeth – two in promargin and four in retromargin. Legs reddish brown except yellow venter of femora, whitish gray scopulae in venter of tarsi and metatarsi, and gray claw tuft. Spination in femora I = II = III = 2-0-3-3, IV = 2-0-3-1; tibiae I = 0-3-2-2, II = 0-4-2-2; III = 1-4-2-2, IV = 0-4-2-2, metatarsi I = II = III = IV = 0-4-2-2. Tarsi two-clawed, each claw with numerous teeth. Leg formula 2143. Pedipalp nearly as long as metatarsi II. Retrolateral tibial apophysis black, bent, and sharply pointed, similar to bull's horn, its length longer than diameter of tibia at that point. Embolus very shortly coiled, pointed apically. Tegulum enlarged beyond cymbium basally. Apical one half of tibia slightly blackened.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.10	3.20	6.30	7.00	2.40	26.00
2	8.10	3.50	7.30	7.90	2.70	29.50
3	6.00	2.70	5.40	5.00	2.00	21.10
4	6.20	2.60	5.80	5.75	2.30	22.65
Pedipalp	2.20	1.00	1.20	–	3.20	7.60

Abdomen brownish yellow except a pair of yellow transverse and contiguous bands in cardiac area, venter entirely yellow. Spinnerets hardly visible dorsally, anterior pair brown, near each other, converging apically but with a small separation basally. Posterior pair a little longer and more wide apart.

Etymology: Named after the horn-like RTA, 'sungay' in Tagalog.

Natural history: A single male specimen was collected through D-Vac suction machine in *Imperata cylindrica* grassland in September.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Mat-i, holotype male, 23 September 1987, A.T. Barrion.

Distribution: Philippines.

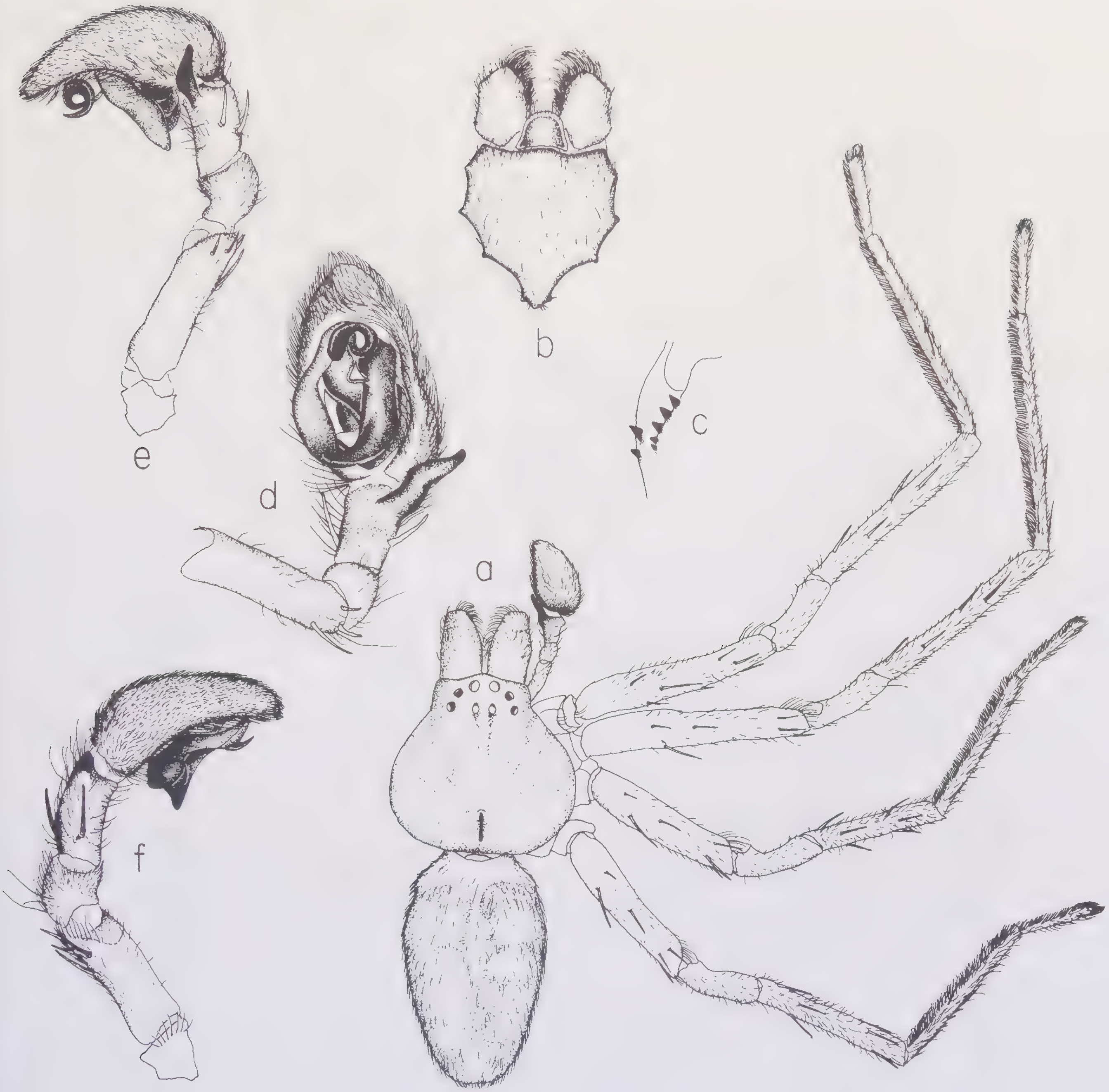


Fig. 172. Male *Isopeda sungaya* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with two promarginals (c); and ventral (d) and lateral (ef) views of pedipalp.

Isopeda igraya new species
(Fig. 173a–g)

Description:
Female: Total length 13.00 mm. Cephalothorax 6.00 mm long, 6.20 mm wide, 4.00 mm high. Abdomen 7.00 mm long, 5.00 mm wide, 4.10 mm high. Cephalothorax a little wider than long, typical of the genus, brownish with yellow area posterior to PE row, red-brown eye area, and black eye margins. Fovea brown, longitudinal and deep. Eight eyes in two rows, AE row slightly recurved and shorter (2.3 mm) than the straight to slightly procurved PE row (3.00 mm). Eye diameter (mm): ALE = 0.35, AME = PLE = 0.30, PME = 0.25.

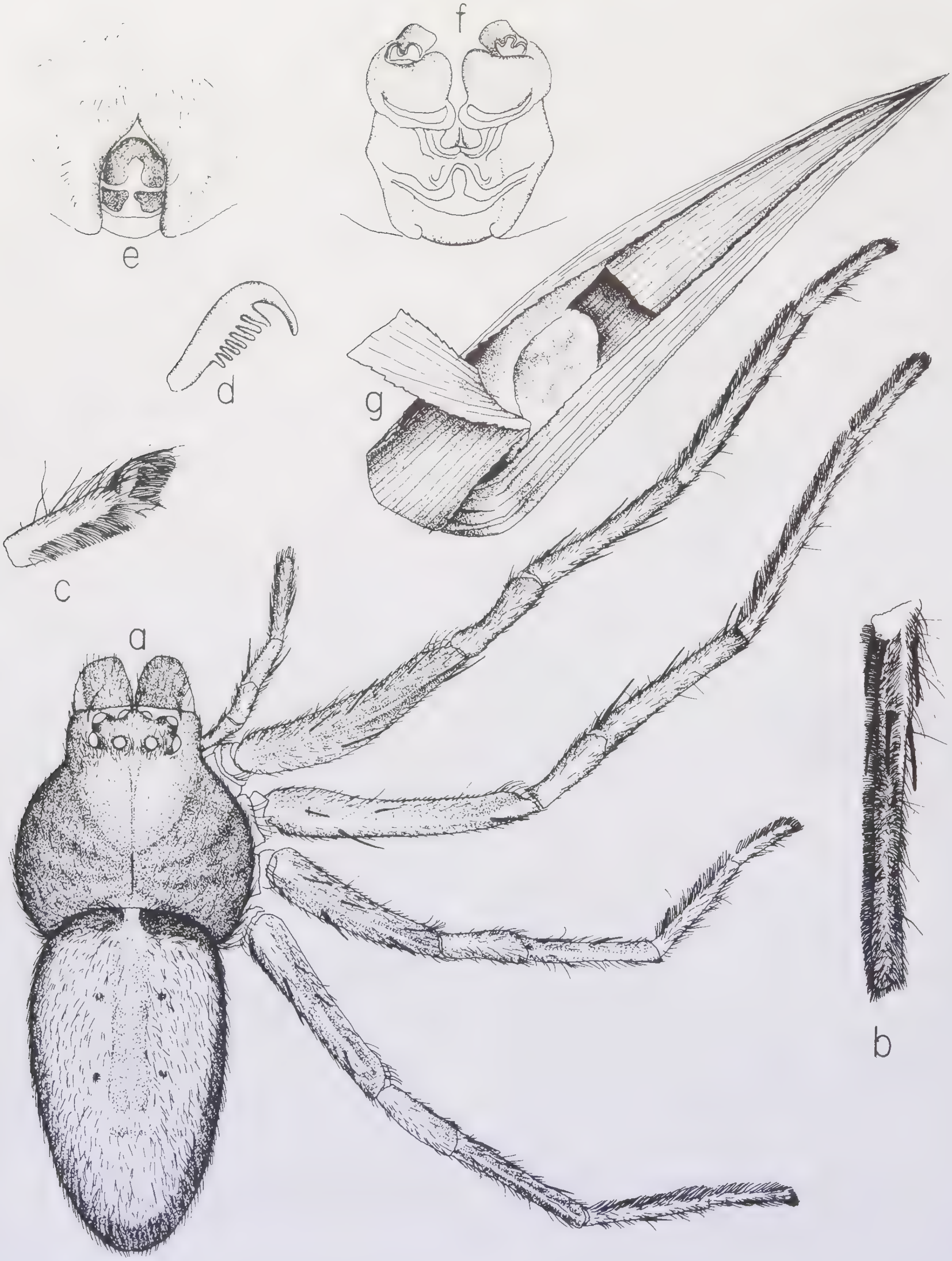


Fig. 173. Female *Isopeda igraya* n. sp. (a); metatarsus I (b); tarsus I (c); teeth of tarsal claws (d); dorsal (e) and ventral (f) views of epigynum; and folded grass leaf containing egg cocoon (g).

Eye separation: AME–AME as long as one eye diameter, AME–ALE slightly shorter than one AME diameter, PME–PME twice AME diameter, PME–PLE 2.14 times AME diameter. Median ocular quadrangle narrower in front than behind, anterior width equal to length. Clypeus height 0.6 AME diameter. Sternum dark red, width (2.85 mm) slightly longer than length (2.75 mm), lateral margins of sternum with denser and longer black hairs than those in the center. Labium same color as sternum except yellow distal end, 2.3 times wider than long. Maxillae mostly dark reddish brown except the yellow oblique band in the inner area. Chelicerae robust with distinct boss. Promargin with a small basal tooth and a large apical tooth. Retromargin with five teeth, two small basal and three large apical teeth. Legs long and slender, dark red except light-colored venter of femora. Spination in femora I = II = III = 2-0-3-3, IV = 2-0-3-1; tibia I = II = III = IV = 0-4-2-2; metatarsi I = II = III = IV = 0-4-2-2. Leg formula 2143. Pedipalp dark red as long as patella I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.90	2.00	6.50	6.00	2.00	23.40
2	7.80	3.10	7.30	6.90	2.20	27.30
3	6.30	2.00	5.00	4.60	1.80	19.70
4	6.00	2.10	5.00	5.40	2.10	20.60
Pedipalp	2.30	0.90	1.70	-	2.90	7.80

Abdomen yellow except broad transverse dark brown bands anterolaterodorsally and light brown cardiac area. Two pairs of sigilla in the apical one half of abdomen. Venter dark reddish brown except reddish epigynum and two pairs of longitudinal white stripes. Spinnerets small encircled by a yellow ring, brown basally and yellow apically, anterior pair converging and posterior pair slightly separated at tips. Epigynum inverted V-shaped with reddish brown inner sclerotization, whitish towards epigastric furrow. Spermathecae with a large second coil.

Etymology: Named after the Tagalog term 'igray' for something blackish.

Natural history: A single holotype female was taken from a folded grass leaf of traditional rice in September. The rolled leaf is 1.2 × 6 cm long and the white egg cocoon inside measures 1.4 × 2.2 cm.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Alcala, holotype female, 21 September 1981, A.T. Barrion.

Distribution: Philippines.

Isopeda catmona new species

(Fig. 174a–e)

Description:

Male: Total length 8.60 mm. Cephalothorax 4.00 mm long, 3.30 mm wide, 1.80 mm high. Abdomen 4.60 mm long, 2.10 mm wide, 2.10 mm high. Cephalothorax yellow-brown, including fovea, except for yellow striae emanating from long longitudinal fovea, cephalic area slightly distinct from thoracic area, hairy but long hairs prevail in the lateral margins of carapace and eye area. Carapace transversely straight posteriorly. Eight eyes, all clear and homogeneous, each with brownish margins, AE row shorter (1.08 mm) than straight PE rows (1.40 mm) and recurved in dorsal view. Eyes diameter (mm): ALE = 0.28 AME = 0.20, PME = PLE = 0.18. Eye separation: AME–AME 0.75 eye diameter, AME = ALE one fourth AME diameter. PME–PME 1.65 mm times AME diameter, PME–PLE 1.3 times AME diameter, ALE–PLE 1.25 times AME diameter. Median ocular quadrangle 1.3 times wider behind than in front, both anterior and posterior widths shorter than length (0.75 mm). Clypeus height small, 0.65 AME diameter. Sternum yellow, longer (2.00 mm) than wide (1.63 mm). Labium same color as sternum and maxillae, length and width almost equal. Maxillae one third longer (0.90 mm) than wide (0.60 mm), moderately cylindrical, anterior end with yellow-brown scopulae. Chelicerae yellow with dark reddish brown subbase of fang, promargin with two teeth and scopulae, retromargin with three teeth. Legs yellow-brown, yellow in the basal one half of femora, entire trochanter, and coxae, long and slender, with scopulae in tarsi and metatarsi, spination in femora I = II = 2-0-3-2, III = IV = 2-0-3-2; tibiae I = II = 3-4-2-2, III = 1-4-2-2, IV = 2-4-2-2. Metatarsi I and II with three ventral spines (one pair subbasally and one submedially) and III and IV with four each (one pair subbasally and one pair submedially). Leg formula 2143. Pedipalp as long as tibia IV and 0.80 of femora I yellow, becoming brownish in the cymbium. Spination on femur = 2-0-1-2, tibia = 1-0-3-1. Retrolateral tibial apophysis approximately one half apical diameter of tibia, apical tip slightly curved inwards. Embolus short, projected towards apex of cymbium. Base of tegulum with a moderately thick layer of whitish hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.40	2.10	7.50	7.35	1.90	26.25
2	7.20	2.20	8.20	7.40	2.00	27.00
3	4.60	1.50	4.75	4.40	1.50	16.75
4	6.50	1.55	5.80	7.05	1.70	22.60
Pedipalp	1.90	0.85	1.20	-	1.85	5.80

Abdomen yellow, ovate tapering towards spinnerets, and lined with moderately short light brown hairs dorsally. Venter pale yellow except for a pair of parallel light brown stripes reaching midlength and transversing the epigastric furrow. Posterior pair of spinnerets widely separated from each other, longer than the contiguous and short anterior spinnerets.

Etymology: The epithet name *catmona* is feminine, derived from the host plant, catmon.

Natural history: The holotype male was collected from fallen catmon flowers without right leg IV and left leg III.

Material examined: PHILIPPINES: *Mindanao Is.*:

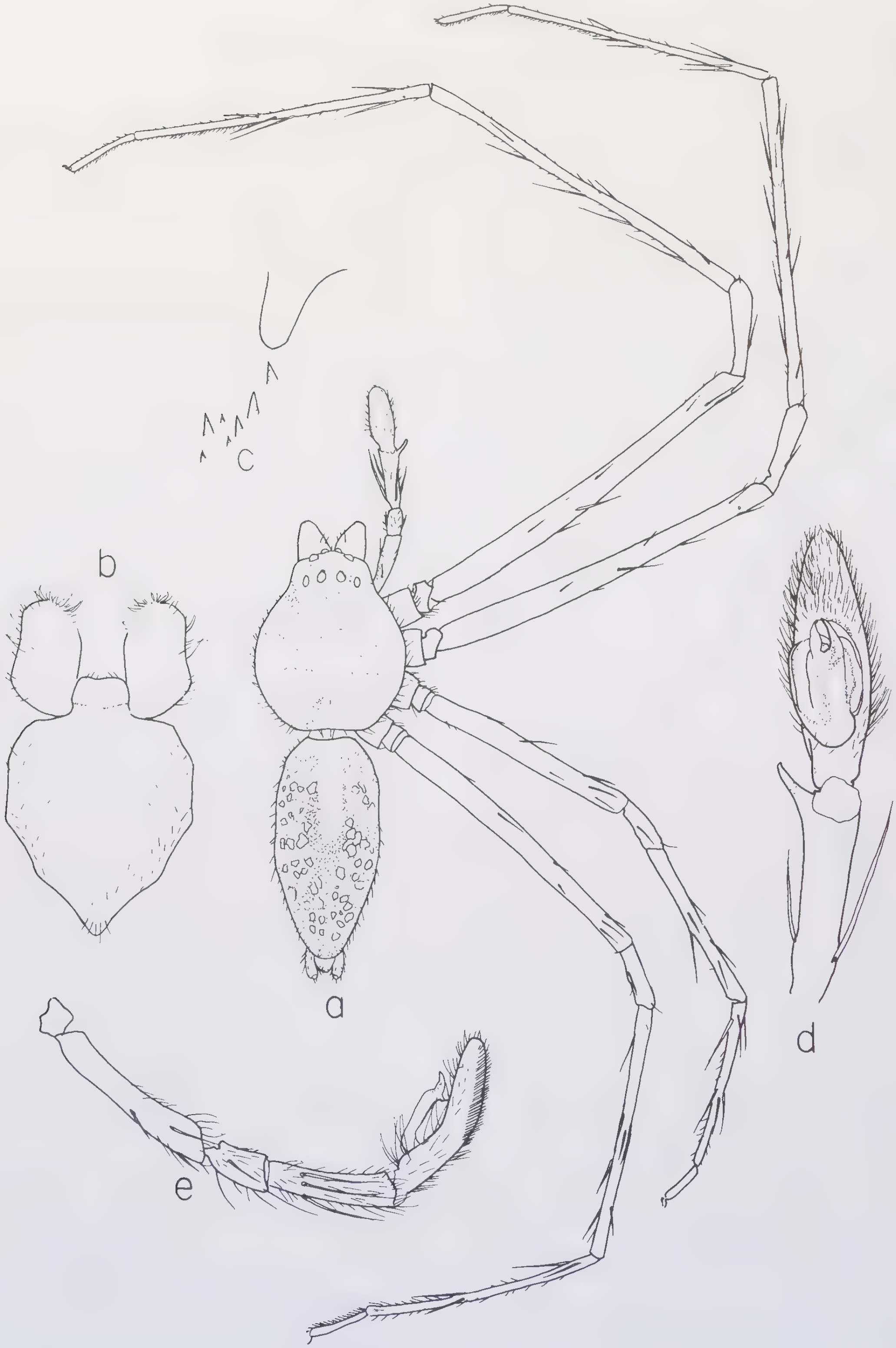


Fig. 174. Male *Isopeda catmona* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with three promarginals (c); and ventral (d) and lateral (e) views of pedipalp.

Misamis Oriental Prov., Claveria, Sta. Cruz, holotype male, 22 September 1987, A.T. Barrion.
Distribution: Philippines.

Isopeda pseudokumanga new species
(Fig. 175a–e)

Description:
Male: Total length 16.90 mm. Cephalothorax 8.00 mm long, 8.40 mm wide, 4.10 mm high. Abdomen 8.90 mm long, 6.70 mm wide, 5.80 mm high. Cephalothorax moderately flat, reddish brown except clear eyes, black eye margin, and pale brown long longitudinal fovea. Cephalic area distinct from the thoracic and lateral sides straight and parallel to each other. Eight eyes in two rows, straight anterior eye row shorter than procurved posterior eye row (3.1 : 3.75 mm). Eye diameter (mm): AME = 0.45, ALE = 0.40, PME = PLE = 0.30. Eye separation: AME–AME a little larger than one eye diameter, AME–ALE as long as one eye diameter, PME–PME 2.33 times PME diameter or 1.6 times AME diameter, PME–PLE twice AME or three times PME diameter. Median ocular quadrangle a little broader in front (1.40 mm) than behind (1.35 mm), anterior width longer than height. Clypeus height very small, one half AME diameter. Sternum hirsute and yellow, longer than wide, concave opposite area between coxae, anterior margin with a median cavity for the labium, posterior margin narrow and sharply pointed, with a clump of long hairs. Labium reddish brown, much wider than long (1.05 : 1.60 mm), constricted transversely in the basal one third, and apical end yellow and flat. Maxillae similar in color to labium longer than wide, scopulae thick sitting on the yellow apical end of maxillae. Chelicerae robust and red, clothed with moderately long yellow-brown hairs. Retromargin with five teeth of increasing size towards base, apical pair slightly separated from the larger trio. Promargin with three teeth, median one the largest, and scopulae located dorsal of the promarginal teeth. Legs red-brown except yellow-brown venter of all femora, long and slender, spines long and prominent, thick scopulae and dorsal hairs located in the venter of metatarsi and tarsi. Spination in femora I = 1-0-3-3, II = III = 2-0-3-3, IV = 2-0-3-1, tibiae I = II = 2-6(2-2-2)-2-2, III = IV = 1-6(2-2-2)-2-2; metatarsi I = 0-3-2-2, II = III = IV = 0-4-2-2. Tarsi two-clawed with thick claw tuft and first one to three apical teeth much larger than the rest. Leg formula 2143. Pedipalp same color as leg, with yellowish brown venter of femora. Femur with three dorsal and one prolateral spines, dorsal apical pair parallel and near each other and the third spine almost bisecting the dorsal apical pair. Tibia with subbasal spines, similar to *I. kumanga* n. sp. Prolateral tibial apophysis almost as long as diameter of tibia at that point, thumb-like, with a moderately round apical edge opposite its blunt projection, inner tip of projection curved inwardly. Cymbium concave in the apical one third, embolus spiral, located midanterior of tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	12.00	4.60	13.00	12.00	3.20	44.80
2	13.00	4.70	13.80	12.50	3.40	47.40
3	8.00	3.40	7.50	6.00	3.00	27.90
4	9.50	3.60	9.20	9.00	3.50	34.80
Pedipalp	3.70	1.60	2.50	–	3.50	11.30

Abdomen grayish except brown stripe anterolaterally and long yellow-brown hairs. Venter yellowish gray with yellow book lungs. Spinnerets not visible dorsally, anterior pairs short and near each other, more robust than the longer and slender posterior pair.
Etymology: Named after its closeness to *I. kumanga*.
Natural history: A male specimen was vial-tapped from a tree stump in the center of an upland rice in July.
Material examined: PHILIPPINES: *Luzon Is.*: Cavite Prov., Alfonso, holotype male, 18 August 1979, O. Serrano and R. Apostol.
Distribution: Philippines.

Isopeda tuhodnigra new species
(Fig. 176a–c)

Description:
Male: Total length 9.50 mm. Cephalothorax 4.80 mm long, 4.80 mm wide, 2.75 mm high. Abdomen 5.70 mm long, 3.50 mm wide, 3.80 mm high. Cephalothorax as long as wide, yellow except black eye margins. Fovea long and shallow, eight eyes in two rows, slightly recurved AE shorter than the straight PE row. Eye diameter (mm): AME = 0.35, ALE = PLE = 0.28, PME = 0.23. Eye separation (mm): AME–AME = AME–ALE = 0.30, PME–PLE = 0.55, PME–PME = 0.45. MOQ very slightly longer behind (0.90 mm) than in front (0.88 mm), height shorter than both widths. Clypeus height moderately small, barely one half AME diameter. Sternum yellow, slightly wider than long, truncate anteriorly, and pointed posteriorly. Labium and maxillae reddish brown, labium wider than long and maxillae as wide as long. Chelicerae vertical, reddish brown retromargin with four teeth and promargin with three teeth. Legs long and slender, with long spines, scopulae in metatarsi and tarsi and claw tufts, bases of metatarsi I and II black. Femur I with two dorsal and three prolateral spines; tibiae I and II each with three pairs of ventral spines, apical pair short and weak; metatarsi I and II each with four ventral spines. Leg formula 2143. Pedipalp shorter than metatarsus IV, RTA developed, black, and porrect, and coiled embolus long, borne on anterior of tegulum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	8.20	2.60	8.90	8.50	2.10	30.30
2	9.50	2.75	10.20	9.60	2.20	34.25
3	5.30	2.00	5.00	4.50	1.65	18.45
4	7.25	2.10	6.85	7.00	1.85	25.05
Pedipalp	2.30	0.80	1.55	–	2.20	6.85

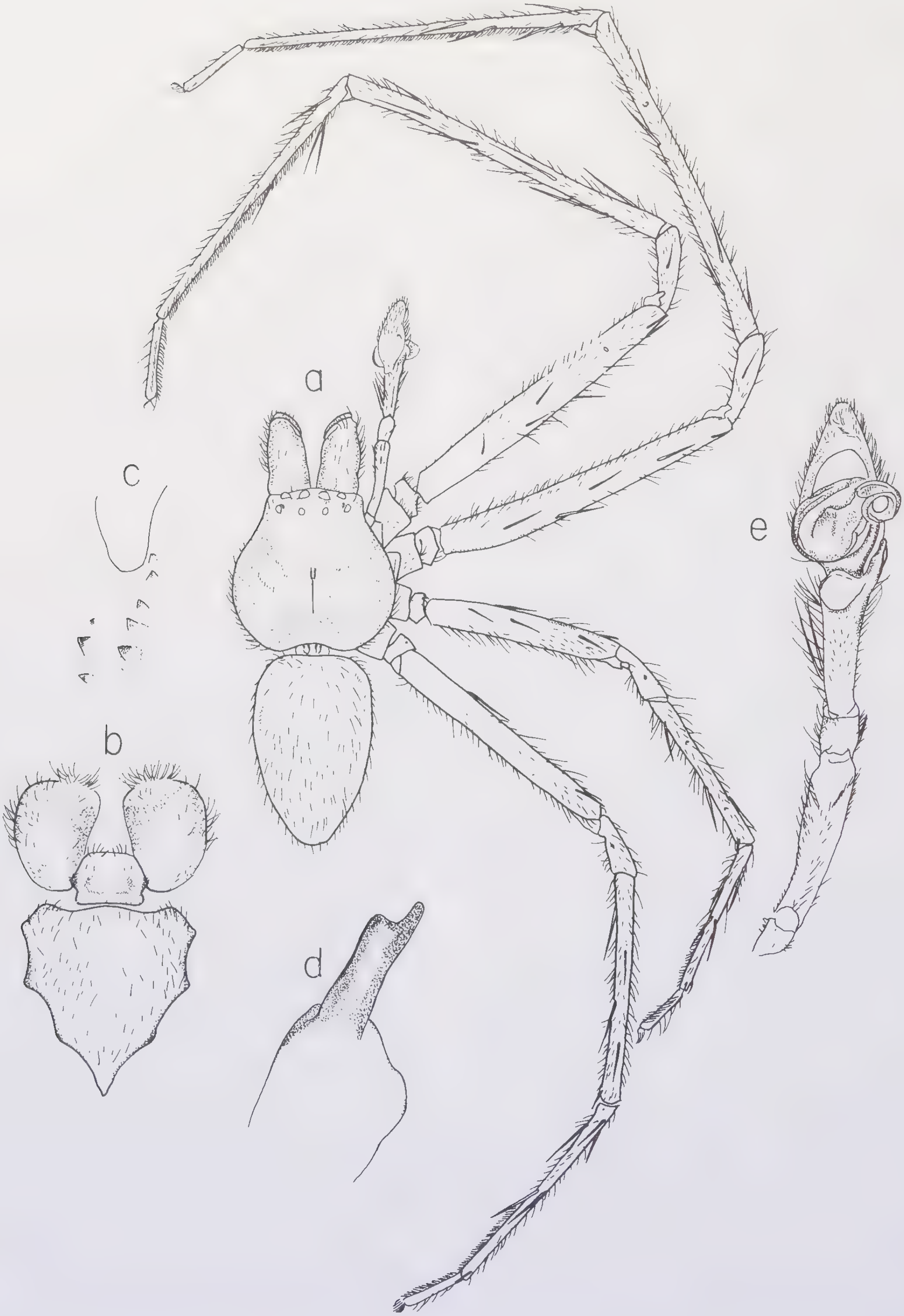


Fig. 175. Male *Isopeda pseudokumanga* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with five retromarginals (c); tibia showing retrolateral apophysis (d); and ventral view of pedipalp (e).

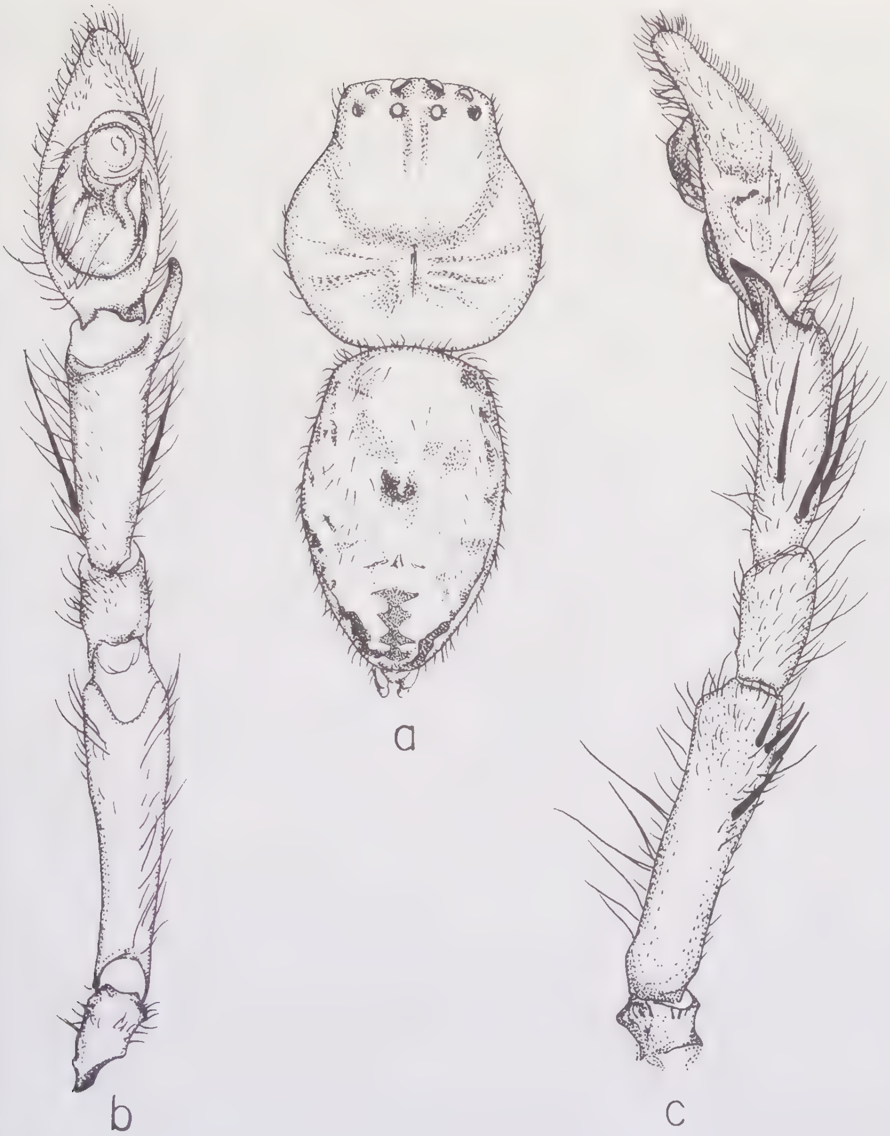


Fig. 176. Male *Isopeda tuhodnigra* n. sp. (a); and ventral (b) and retrolateral (c) views of pedipalp.

Abdomen oblongate, yellow except brown lateral borders and posterior end, and middle with a dark brown spot. Venter uniformly yellow. Spinnerets typical of the genus.

Etymology: Named after the black ('nigra') knees ('tuhod').

Natural history: The two specimens were collected from yellow pan traps set along the border of a ricefield in June.

Material examined: PHILIPPINES: *Mindanao Is.*: Misamis Oriental Prov., Claveria, Kalingagan Vill., holotype male, 23 June 1986, A.T. Barrion; paratype male, same data as holotype.

Distribution: Philippines.

Isopeda bicolana new species
(Fig. 177a–c)

Description:

Male: Total length 12.70 mm. Cephalothorax 5.20 mm long, 5.65 mm wide, 4.10 mm high. Abdomen 7.50 mm long, 4.20 mm wide, 4.20 mm high. Cephalothorax slightly flattened, pale reddish brown with moderately distinct white and short black hairs in the thoracic area and a few black hairs behind PLE and sides of LE, and black eye margins. Cephalic area distinct and higher than the thoracic area. Fovea brown, longitudinal, and long. Eight homogeneous eyes in two rows, AE shorter than PE. Eye diameter (mm): AME = 0.40, ALE = 0.37; PLE = 0.27, PME = 0.25. Eye separation: AME–AME one eighth shorter than AME diameter,

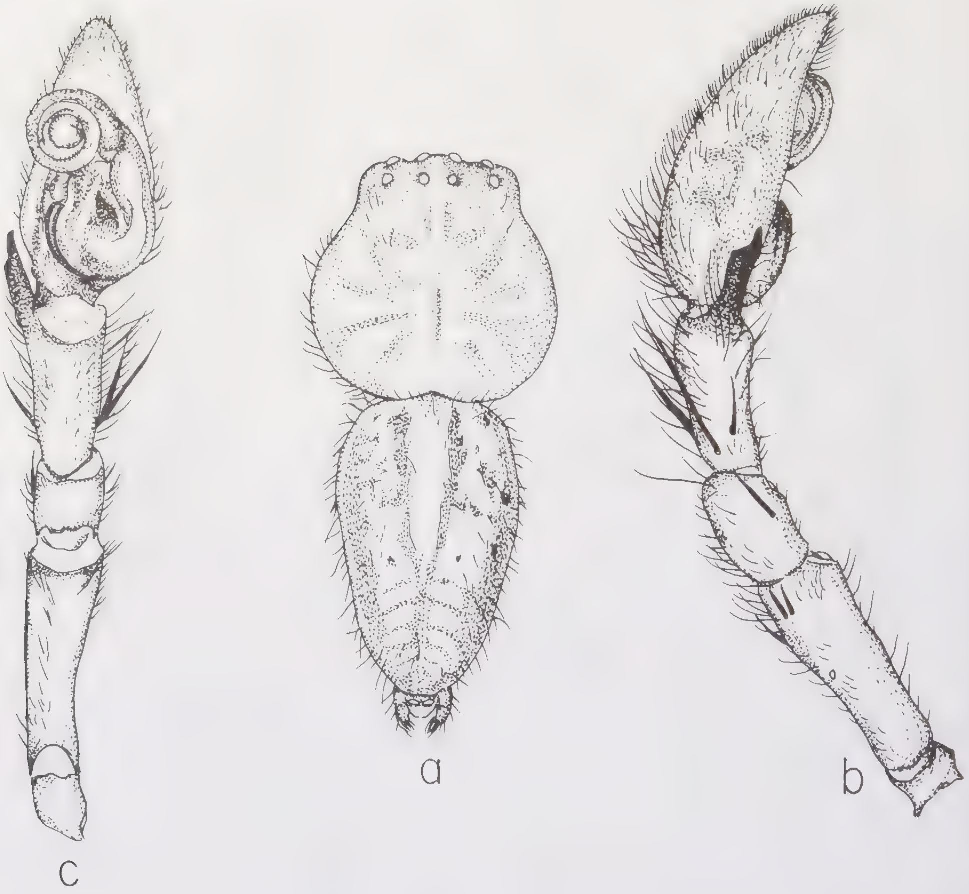


Fig. 177. Male *Isopeda bicolana* n. sp. (a); and ventral (b) and retrolateral (c) views of pedipalp.

AME–ALE three fourths eye diameter, PME–PME almost twice PME diameter, PME–PLE about three times PME diameter. Median ocular quadrangle subsquare. Clypeus height very small, 0.63 AME diameter. Sternum yellow-brown and hirsute, longer (3 mm) than wide (2.8 mm), apical end concave for receipt of labium base, margins moderately curved to straight, with small tubercle opposite each coxa, submargins yellow, and middle part pale reddish brown. Labium twice wider than long, reddish brown except yellow apex. Maxillae longer than wide, mostly pale reddish brown, except yellow midapex posterior to the scopulae. Chelicerae robust, reddish brown, with three promarginal and four retromarginal teeth. Midpromarginal tooth the largest. Retromarginal teeth in increasing size towards base, basal three close to each other and apical tooth the farthest. Legs long and reddish brown except yellow venter of femora and coxae. Spination in femora I = II = III = 2-0-3-3, IV = 2-0-3-0, tibiae I = II = 2 = 6(2-2-2)-2-2, III = IV = 1-6(2-2-2)-2-2; metatarsi I = 1-4-1-1, II = III = IV = 0-4-2-2. Venter of metatarsi and tarsi with dense scopulae. Tarsi two-clawed with dense claw tuft. Leg formula 2143. Pedipalp yellow-brown becoming pale reddish brown in patella to cymbium. Retrolateral tibial apophysis (RTA) dark red and thumb-like with a blunt protrusion lateroapically, its length 1.28 times longer than tibial diameter at base of RTA. Tibia with four subbasal spines, one dorsal, two prolateral, and one retrolateral. Embolus spiral anterior to tegulum in the apical three fourths of cymbium.

Length of leg segments and pedipalp (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	9.20	3.30	10.20	9.10	2.50	34.30
2	10.60	3.55	11.85	10.40	2.80	39.20
3	6.10	2.40	5.80	5.10	1.90	21.30
4	7.80	2.60	7.30	7.10	2.30	27.10
Pedipalp	2.50	1.10	2.00	-	3.20	8.80

Abdomen hirsute, longer than wide, widest in the apical one third, checkered brown with yellowish white marking, except brownish base of yellow anal tubercle. Abdominal venter U-shaped, gray-brown with a yellow median running posterior of epigastric furrow to the posterior one seventh of abdomen and becoming circular anterior to the epigastric furrow. Anterior spinnerets closer to each other and more robust but shorter than the wide apart posterior pair.

Etymology: Name after the region of the type locality.

Natural history: The only male specimen was D-Vac collected from upland rice in August.

Material examined: PHILIPPINES: *Luzon Is.*: Bicol Region, Sorsogon Prov., Sorsogon, 11.2 km NE before

Matnog, holotype male, 8 August 1988, A.T. Barrion. **Distribution:** Philippines.

FAMILY MIMETIDAE SIMON

(Assassin Spiders)

The members of this family are relatively small and can be easily distinguished from all other related spiders by the presence of a promarginal row of long, slightly curved, regularly spaced spines, in the intervals between which is a row of much shorter spines, curved near the ends, the distal ones longer than the more proximal on tibiae and metatarsi I and II.

Mimetids have heterogeneous eyes arranged in two rows, chelicerae fairly long and slender, showing affinities with Archaidae, fused at the base, without boss, provided on promargin of fang furrow with a series of long appressed bristles, both fang margins toothed; labium free, not rebordered, and endites converging; palp of female with a claw; upper tarsal claws similar and pectinate in a single row, and spurious claws present; two rows of trichobothria on tibiae and a single one on metatarsi; colulus present; internal anatomy almost similar to that of Epeiridae; with three pairs of cardiac ostia, tracheal system limited to abdomen, and spiracle close to the spinnerets.

These spiders are slow-moving spiders and not known to make definite snares or webs. They chiefly prey on other spiders. The prey are killed almost instantaneously by what must be a singularly venomous poison produced by a mimetid. The prey is not mashed and chewed, but, as in the Theridiidae, simply sucked dry. They are found on low plants and bushes, or under debris on the ground.

KEY TO THE MIMETID GENERA AND SPECIES

1 Clypeus height small, 0.69 times AME diameter; abdomen longer than wide, broadest posteriorly and moderately concave posteromedially (Fig. 178ab): maxillae nearly parallel to each other, not converging apically (Fig. 178c); chelicera with six or seven promarginal spines and a long subapical one (Fig. 178d); leg I 1.92 times longer than IV; tibiae I and II with 12 and nine long prolateral spines, respectively; epigynum with an anterior pair of spherical lobes and an elongate pair posteriorly (Fig. 178f). .... *Mimetus marjorieae* n. sp. (Fig. 178a–g)

– Clypeus height large; abdomen tapers posteriorly; apices of maxillae converging; leg I not more than 1.3 times as long as leg IV; chelicerae without strong bristles. 2

2 Cephalothorax slightly convex with a brown subdorsal band and a median tuning-fork-like band, its leg moderately broadened; abdomen triangular, without humps (Fig. 179a); sternum yellow; cymbium triangular, basal end with a cavity; cymbial process reddish brown, somewhat small, r-like in posterolateral view (Fig. 179d); leg formula 1423, femora and tibiae with many spots. . *Ero salittana* n. sp. (Fig. 179a–e)

– Cephalothorax strongly convex, yellow-brown band running from the median eyes to the inclined part of thoracic groove and a broad comma-shaped band emanating from the lateral eyes, reaching anterior side of fovea (Fig. 180a); sternum with three pairs of oblique gray bands anteriorly (Fig. 180b); abdomen subglobular but tapering posteriorly; cymbium rounded apically; cymbial process with three prongs (Fig. 180e); leg formula 1243, femora with gray bands at midhalf. ...... *Ero luzonensis* n. sp. (Fig. 180a–f)

Genus *Mimetus* Hentz

Mimetus Hentz, 1832. Amen. J. Sci. Arts. 21: 104.

Mimetus Hentz is comprised of approximately 53 nominal species distributed worldwide. Very similar to *Ero* C.L. Koch except that *Mimetus* species have a longer lower cephalothorax; chelicerae with a conspicuous heavy bristle in the retromargin, about two thirds the distance from base to fang groove; clypeus height small, 0.3–0.5 that of median ocular quadrangle; leg I 1.5 times or more longer than leg IV; abdomen without humps, high anteriorly and broadest behind the anterior end, nearly angular, and dorsum normally bears markings or folium similar to some araneid genera.

Mimetus marjorieae new species

(Fig. 178a–g)

Description:

Female: Total length 4.96 mm. Cephalothorax 2.18 mm long, 1.50 mm wide, 1.20 mm high. Abdomen 2.78 mm long, 2.65 mm wide, 1.85 mm high. Cephalothorax yellow with a broad midlongitudinal brown band in between posterior of PME and fovea, and four small brown spots on each side of the broad band. Cephalic lower than thoracic area, the latter highest in the foveal portion. Eight eyes, with black eye margins, in two rows, strongly recurved AE row nearly as long as procurved PE row, AME bulging and LE contiguous, borne on a small tubercle. Eye diameter (mm): AME = 0.14, PLE = 0.13, ALE = PME = 0.11. Eye separation: AME–AME a little over AME diameter, AME–ALE 0.6 times AME diameter, PME–PME 0.43 times diameter of AME, PME–PLE 1.07 times longer than AME diameter and as long as AME separation, ALE–PLE contiguous. Median ocular quadrangle almost twice broader in front (0.40 mm) than behind (0.26 mm), anterior width longer than length (0.35 mm). Clypeus height small, 0.69 AME diameter. Sternum yellow with straight and bordered margins except anterior end with three concavities,

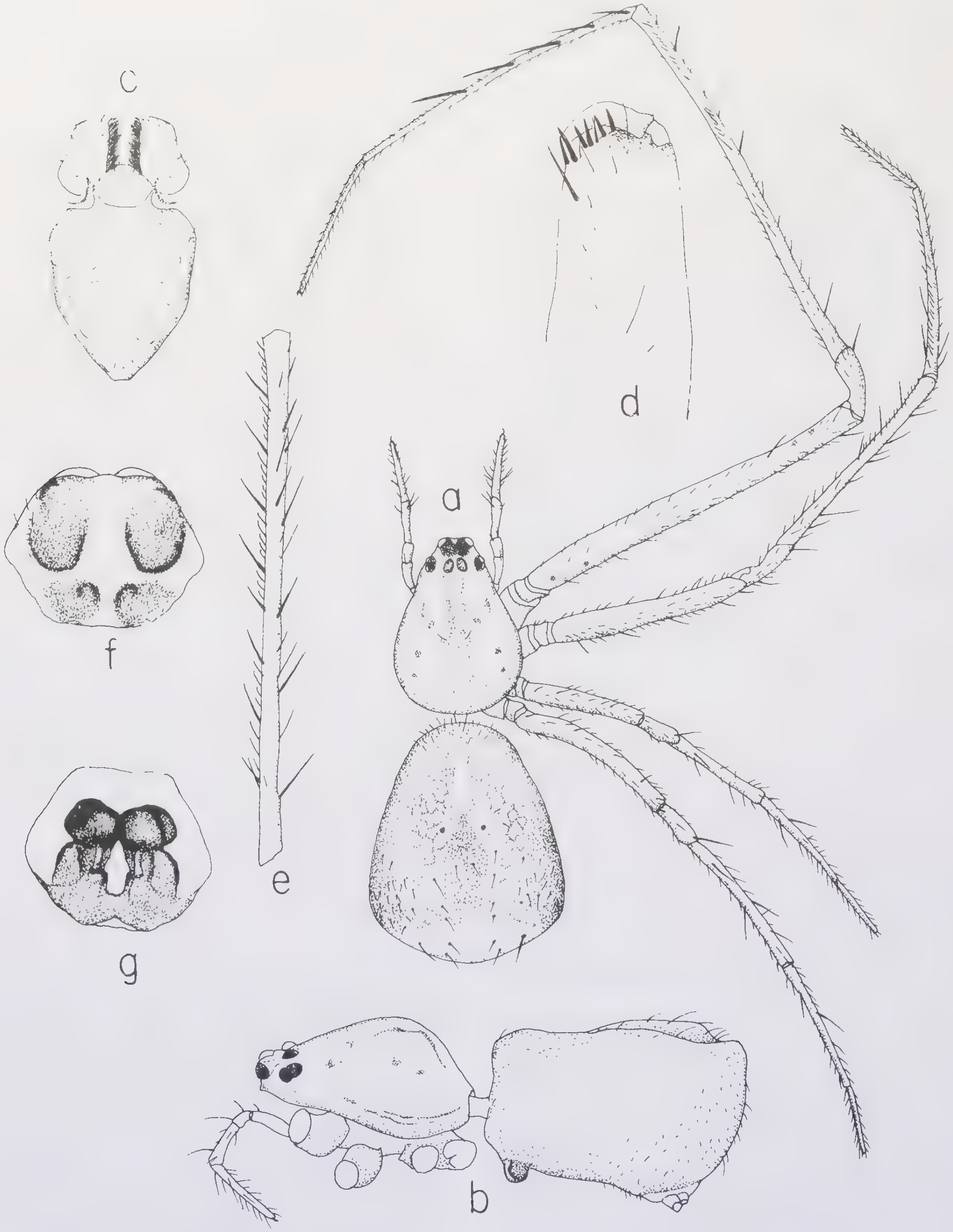


Fig. 178. Female *Mimetus marjorieae* n. sp. (a); side view (b); sternum, labium, and maxillae (c); chelicera (d); tibia I (e); and dorsal (f) and ventral (g) views of epigynum.

posterior end shortly truncated, central plate with sublateral long hairs and absent in the median area. Labium yellow, bell-shaped with rounded anterior end, and a pair of brown moderately long hairs distally. Maxillae yellow, moderately small, retromargin without teeth, promargin with six or seven spines and an additional one in subapex of chelicerae, submedian dorsal part with a long hair. Legs long and slender, yellow with brown to gray spots on bases of some spines in legs I and II, spination typical of the genus, tibiae I and II with 9–12 long prolateral spines, right tibia I with 12, from base to apex a series of short spines in between long ones in the following arrangement: 0, 1, 2, 2, 4, 4, 3, 5, 5, 5, 5 and right tibia II with long setae and setal pattern in between is 0, 0, 0, 2, 4, 5, 5, 5; metatarsi I with five long prolateral setae and with an in-between setal pattern of 5, 6, 6, 7, 12 from base to apex; metatarsi II with only three and a pattern of 4, 7, 13. Tarsi three-clawed, each superior claw with four or five teeth. Pedipalp as long as combined length of femur III and patella III, tarsi single-clawed with one or two teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.60	0.93	4.63	4.00	1.80	15.96
2	3.00	0.83	3.08	2.60	1.15	10.66
3	2.00	0.55	1.55	1.45	0.80	6.35
4	2.68	0.60	2.15	2.05	0.79	8.27
Pedipalp	0.70	0.30	0.55	–	1.00	2.55

Abdomen yellow, wider behind than in front to subtriangular and clothed with brownish setae, confined to the median posterior one half. Epigynum simple, a subglobular plate with two pairs of reddish brown spots in dorsal view, ventral view with a small elongate to arrow-like median orifice, two pairs of spermathecae together longitudinally and apically, posterior epigynal margin with a V-shaped or triangular orifice.

Etymology: Named after Marjorie Spotts-Litsinger for her constant encouragement and support to all entomology–cropping system staff.

Natural history: A single female was collected from 48-day-old direct-seeded upland rice by D-Vac suction machine in August.

Material examined: PHILIPPINES: *Luzon Is.*: Laguna Prov., Caliraya, Manipon Vill., holotype female, 23 September 1985, A.T. Barrion.

Distribution: Philippines.

Genus *Ero* C.L. Koch

Ero C.L. Koch, 1837. Uebers. Arachn. Syst. 1: 8.

Ero C.L. Koch is a widely distributed genus of assassin spiders, comprising about 30 nominal species. Members of the genus are readily diagnosed by the presence of the following characters: cephalothorax strongly convex, high in the middle and sloping steeply posterior to fovea; chelicerae without conspicuous heavy bristles; clypeus height barely less than length of median ocular quadrangle; leg I not more than 1.3 times longer than leg IV; and abdomen with a pair of conical humps anteriorly.

Ero is sometimes mistaken for a member of the family Theridiidae.

Ero salittana new species

(Fig. 179a–c)

Description:

Male: Total length 2.05 mm. Cephalothorax 0.95 mm long, 0.80 mm wide, 0.58 mm high. Abdomen 1.10 mm long, 1.20 mm wide, 0.95 mm high. Cephalothorax yellow with brown subdorsal bands and a median tuning-fork-like band slightly expanded in its leg along fovea, median band enclose three long spines, margins of carapace above coxa I and base of chelicerae with a grayish brown band, cephalic narrower than the thoracic area. Eight tumid eyes, homogeneous, AE strongly recurved and PE straight to slightly recurved. Eye diameter (mm): AME = PME = 0.10, PLE = ALE = 0.08. Eye separation (mm): AME–AME = 0.06, AME–AME = 0.01, PME–PME = 0.03, PME–PLE = 0.09. Lateral eyes contiguous. MOQ wider in front than behind (0.06 : 0.03 mm). Clypeus height large, 1.5 times AME diameter, and bearing a longitudinal median gray band. Sternum yellow, smooth, longer than wide. Labium gray, except yellow apex, subtriangular, and longer than wide. Maxillae yellow, except gray midhalf of inner area, longer than wide, apically converging. Chelicerae yellow, vertical, basally separated but fused on inner side at about midlength. Legs long and slender, bearing numerous spots or bands, particularly in femora and tibiae, and spinous. Femur I as long as tibia I, metatarsus III with a dorsoprolateral and a dorsoretrolateral spine opposite each other. Leg formula 1423. Pedipalp as long as combined length of metatarsus I and tarsus I; tibia with more black spots than the femur and bearing more than ten trichobothria in apical one half; longest trichobothrium as long as one half of tibial length; cymbium triangular, with many setae, basal end with a cavity; cymbial process reddish brown and r-shaped in posterobasal view; embolus very shortly pointed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.15	0.45	2.15	2.00	0.90	7.65
2	1.70	0.30	1.50	1.30	0.60	3.40
3	1.10	0.20	0.75	0.60	0.60	3.25
4	1.40	0.25	1.15	1.00	0.55	4.35
Pedipalp	1.25	0.20	1.10	–	0.35	2.90

Abdomen yellowish brown, triangular, wider than long, and clothed with light brown setae, venter similarly colored to dorsum except for the dark brown openings of the book lungs. Spinnerets pale yellow, anterior pair separated from each other basally and more robust than the posterior pair.

Female (without abdomen): Cephalothorax 1.00 mm long, 0.75 mm wide, 0.60 mm high. Cephalothorax distinctly convex, yellowish brown with a median gray band, subdorsal bands absent. Eye pattern and arrangement similar to the male. Chelicerae slightly darker than in male. Legs brown with gray spots, more distinct in femora I to IV, metatarsus I bears five spines, subbasal spine shortest, long prolateral spines with three small spines between 1 and 2, two spines between 2 and 3, three between 3 and 4, and five between 4 and 5; metatarsus III almost as long as tarsus III; leg formula 1243. The second female, also without abdomen, has only four small spines between long spines 4 and 5, and has a broader gray band in the clypeus below AME.

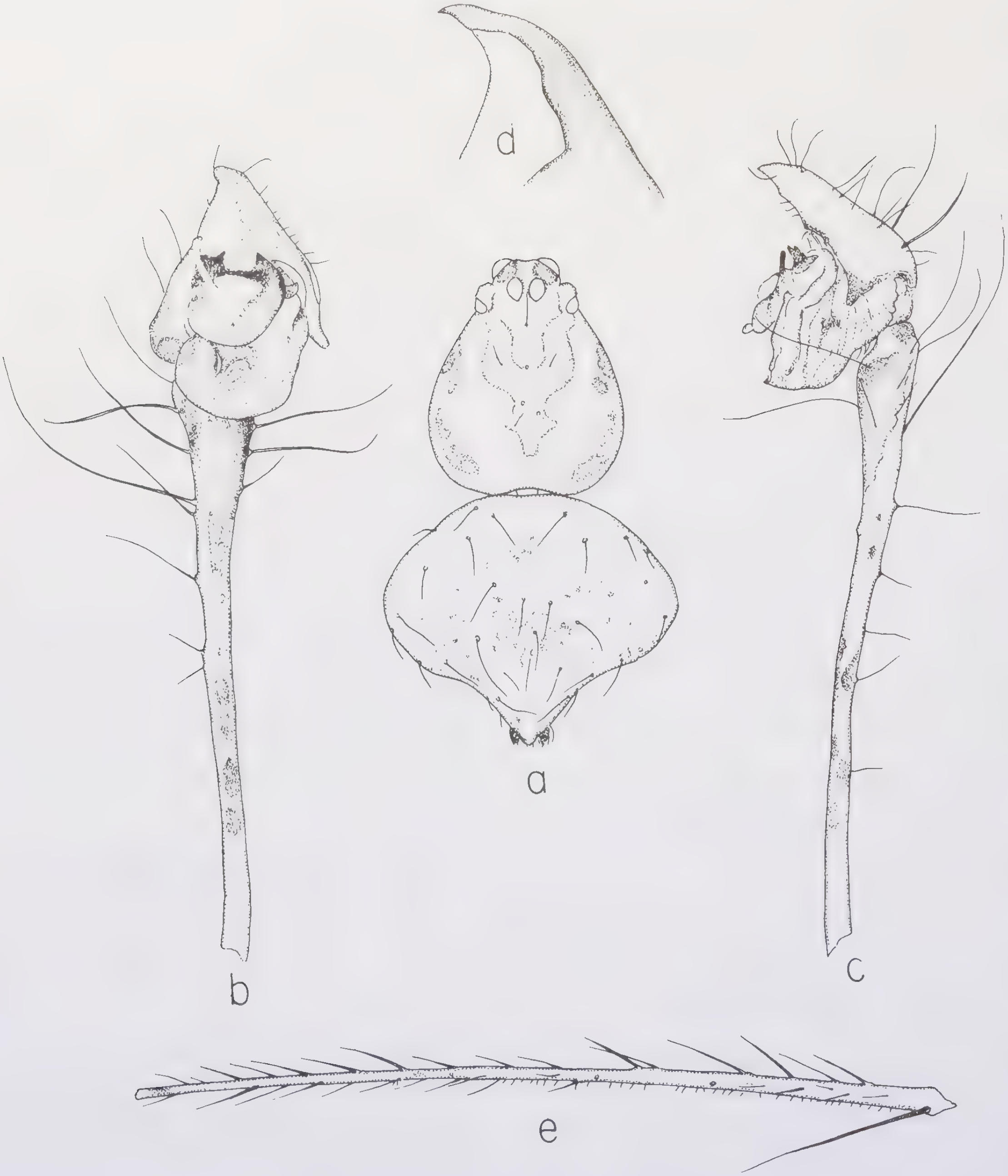


Fig. 179. Male *Ero salittana* n. sp. (a); ventral (b) and retrolateral (c) views of pedipalp; close-up of cymbial process (d); and metatarsus I (e).

Etymology: Named after the alternating long and short spines in metatarsus, 'salittan' in Tagalog plus a.
Natural history: The specimens were isolated from kerosene light trap samples collected in August.
Material examined:: PHILIPPINES: *Luzon Is.*: Quezon Prov., Real, Llavac Vill., holotype male, 22 August 1985, M. Perez and P. Apostol; one female paratype without abdomen, same data as holotype.
Distribution: Philippines.

Ero luzonensis new species
(Fig. 180a–f)

Description:
Male: Total length 2.31 mm. Cephalothorax 1.13 mm long, 0.88 mm wide, 0.95 mm high. Abdomen 1.18 mm long, 0.91 mm wide, 0.88 mm high. Cephalothorax yellow-brown, strongly convex, median part with a dark brown band running from the inclined thoracic area to

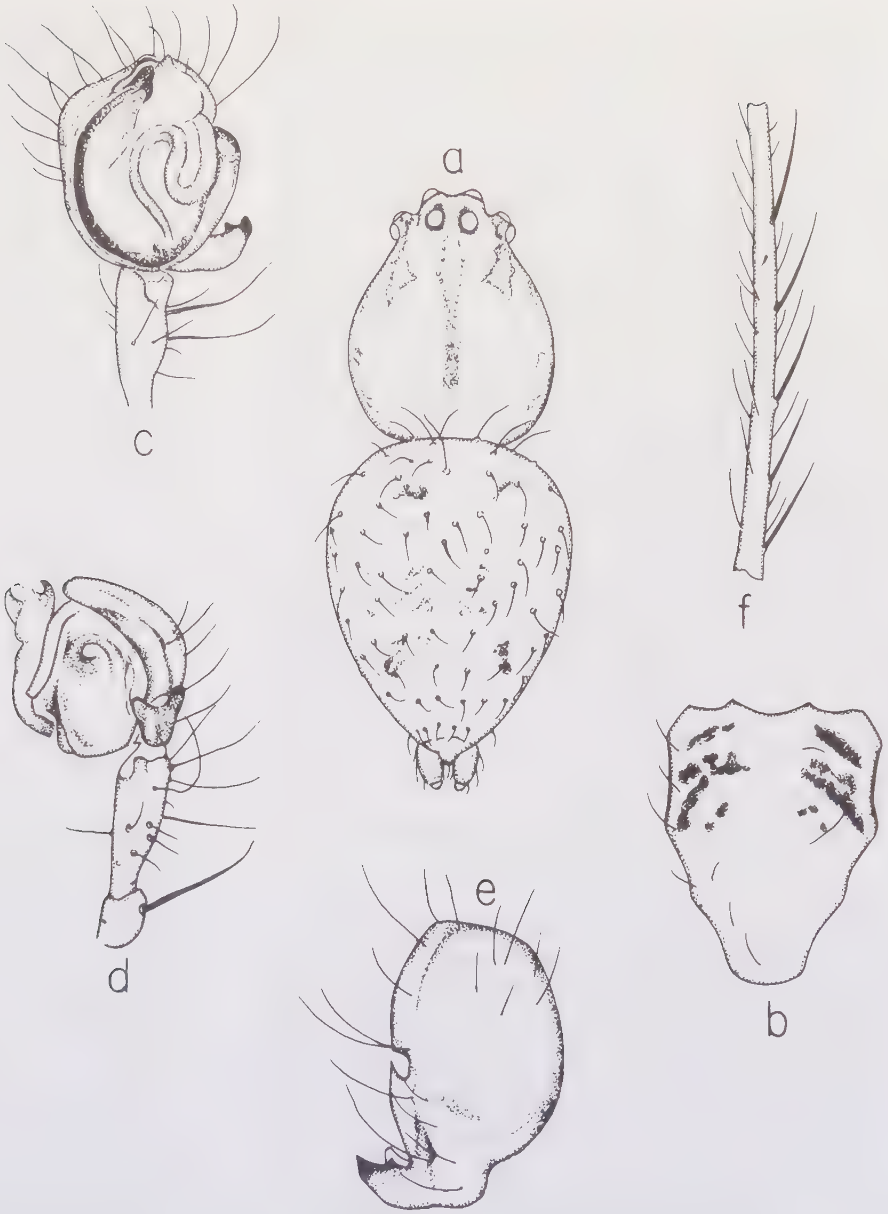


Fig. 180. Male *Ero luzonensis* n. sp. (a); sternum (b); ventral (c) and retrolateral (d) views of pedipalp; close-up of process (e); and metatarsus I (f).

the median eye area, a broad comma-shaped band present behind lateral eyes with a broad tail end, margins of cephalic area with a moderately long gray band and that on thorax with two spots. Eyes in two rows, AE strongly recurved and PE straight to slightly recurved, lateral eyes contiguous. Eye diameters (mm): AME = ALE = PME = 0.10, PLE = 0.09. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.07, PME–PME = 0.80, PME–PLE = 0.10. MOQ narrower behind (0.20 mm) than in front (0.31 mm). Clypeus height large, 2.8 times AME diameter. Sternum longer than wide, yellow with three pairs of oblique gray bands in anterior one half, median area moderately elevated, posterior end subtruncate, widely separating coxae IV. Labium yellow, triangular, and wider than long. Maxillae yellow, longer than wide, and apically converging. Chelicerae yellowish brown, vertical, promargin with two spines, fused subbasally and slightly separated basally. Legs yellow, long, and with spines, with gray bands in femora I to IV and tibiae I to IV, black spots in midlength and apices of metatarsi III and IV and midlength of tarsi III and IV. Tibia I with six prolateral spines, basal spines the strongest and subbasal spine the weakest, and with a single strong dorsal spine. Metatarsus I bears five prolateral spines in increasing length towards apex, with zero to two minute hairs in between the spines. Leg formula 1243. Pedipalp as long as combined length of metatarsus IV and tarsus IV; tibia thin in basal one fourth, dorsum with two or three trichobothria at midlength and two or three long hairs towards apical one half, cymbial process with three prongs, anterior to the process is a midlateral cut in the cymbium, producing a pointed structure at base of cut, cymbium hirsute and apically rounded.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.90	0.40	1.85	0.98	0.93	6.06
2	1.50	0.38	1.40	0.83	0.78	4.89
3	0.88	0.25	0.60	0.44	0.45	2.62
4	1.25	0.35	0.86	0.60	0.53	3.59
Pedipalp	0.41	0.13	0.24	–	0.35	1.13

Abdomen yellowish brown with brown spines, subglobular but tapers posteriorly dorsally, with a pair of humps projected laterally present anteriorly and a bigger pair at about midlength. Venter yellowish with fewer setae, brownish in epigastric furrow, and pedicel in the apical one fifth of abdomen.

Etymology: Named after the island of Luzon, the type locality.

Natural history: The single specimen was KLT-collected in July.

Material examined: PHILIPPINES: *Luzon Is.*: Quezon Prov., Real, Llavac Vill., holotype male, 2 August 1985, M. Perez and A.T. Barrion.

Distribution: Philippines.

FAMILY ZODARIIDAE THORELL

(Ant-eating Spiders)

Zodariidae are small to medium-sized vagrant and burrowing spiders, 2.25–14.00 mm long, terrestrial and often found on soil debris, leaf litter, underneath stones or logs. Some species construct a palisade of vertically arranged twigs or leaves around the entrance of the burrow (Main 1964). Members of this family are shiny, smooth to sparsely-haired, red to dark-colored, with or without white spots on the abdominal dorsum. Eyes vary in arrangement from two rows of four to three rows of two, two, and four. Cephalothorax smooth and strongly convex, high anteriorly and sometimes sloping in the longitudinal fovea. Chelicerae strong and vertical furrow usually toothless, sometimes two promarginal and retromarginal teeth present. Boss present, though sometimes absent. Legs not spinous, apicoventrals of metatarsi usually with a mat of black hairs, tarsi often three-clawed. Anterior spinnerets large, obscuring the other four.

KEY TO THE GENERA AND SPECIES OF ANT-EATING SPIDERS

1 Small spiders, 2.25–2.45 mm long; abdomen with three transversely concave yellow bands and a pair of elongate, parallel, and longitudinal yellow bands along cardiac area (Figs 181a, 182a); legs with a median femoral band; tibia of pedipalp with five apical and two subbasal processes, retrolateral subbasal process distinct and strong (Fig. 181d); embolus long, thin, and hair-like in apical one half, looping from base of tegulum to apex of cymbium and looping posteriorly, forming an 8-like loop (Fig. 181de); small cymbium scoop-like retrolaterally with deep median cavity for the genital parts; epigynum with a subglobular median hairy plate, a pair of cylindrical structures present between plate and epigastric furrow (Fig. 182d). .. *Asceua gruezoi* Barrion and Litsinger (Figs 181a–e, 182a–e)

– Relatively small to medium-sized spiders (3.33–8.20 mm long) with a transverse row of spines posteroventrally. 2

2 Female; cephalothorax slightly longer than abdomen with four pairs of chalk-white medium spots, broadest in the second pair starting from the anterior (Fig. 183a), laterals each with three larger chalk-white spots; epigynum simple and 'mouth-like' with a pair of transverse v-shaped sclerotized areas along lateral margin (Fig. 183c); body length 3.33 mm. .... *Langbiana panchoi* Barrion and Litsinger (Fig. 183a–c)

– Male 3

3 Cephalothorax shorter than abdomen with five transverse yellow bands, posteriormost band broad (Fig. 185a); cymbium obliquely truncate towards apex in dorsal view; RTA three-pronged in ventral view (Fig. 185cf); tibiae I and II each with eight ventral spines; metatarsus I/II 1.48; leg formula 4123; body length 8.20 mm. ...... *Langbiana pricei* n. sp. (Fig. 185a–f)

– Cephalothorax as long as to slightly longer than abdomen; body length 3.33–6.65 mm. 4

4 Relatively small spiders, 3.30 mm long; abdomen similar to *L. panchoi* female (Fig. 184a); tibia I with six or seven ventral spines – two or three prolateroventrals and four retrolateroventrals), tibia IV with five ventral spines – three prolateroventrals and two retrolateroventrals; tegular membrane with an erect tubercle; embolus thick, bifurcate at tip (Fig. 184bc); cymbium obliquely truncate in retrolateral view, with two apical spines (Fig. 184b); PTA small, strongly sclerotized, with tapered to rounded tip projected laterally towards tegulum (Fig. 184c); posterior end of abdominal venter with a transverse row of 10–12 short spines (Fig. 184d). .... *Langbiana panchoi* Barrion and Litsinger (Fig. 184a–d)

– Medium-sized spiders, 6.00–6.65 mm long; abdominal markings different from above. 5

5 Cephalothorax slightly longer than abdomen, CL : CW = 1.42, CL : AbL = 1.02; abdomen with four pairs of chalk-white irregularly ovate spots dorsally (Fig. 186a); maxillae less strongly convergent (Fig. 186b); apical one half of femora I to IV reddish brown; tibia of pedipalp angulate with a blunt tip,

inner base posterior to tip broad, and midtibia with five or six long hairs (Fig. 186e–h); embolus moderately short, robust, and split almost apically (Fig. 186e); cymbium with four teeth at apex, not flattened in dorsal view. .... *Langbiana slaburuprica* n. sp. (Fig. 186a–h)

- Cephalothorax as long as abdomen, CL : CW = 1.36, CL : AbL = 1.00; abdomen with three pairs of dorsomedian irregularly shaped white spots, midlaterals with a spot each and posterolaterals with an elongate white band running to spinnerets (Fig. 187a); maxillae more strongly converging; femora I–IV yellowish brown; tibia of pedipalp curved towards tegulum, with a broad outer base (Fig. 187b); embolus thinner than *L. slaburuprica*, bifurcated in apical two thirds, ventral part much shorter than the dorsal one; cymbium with three teeth apically (Fig. 187c). .... *Langbiana calilungae* Barrion and Litsinger (Fig. 187a–d)

Genus *Asceua* Thorell

Asceua Thorell, 1887, Annali. Mus. Civ. Stor. Nat. Giacomo Doria 25: 76.

Asceua Thorell is an oriental genus of ant-eating spiders with a complicated history. It was treated as a junior synonym of *Storena* Walckenaer, 1805 by Simon in 1893 but was revalidated by Bosmans and Van Hove. Members of the genus are very small spiders, barely 3 mm long and very similar to *Langbiana* and *Storena* in having convex reticulated carapace, large clypeus, and marked dorsum of abdomen. However, *Asceua* species have no spines on legs, posteroventral tip of abdomen without a transverse row of short spines, male pedipalp very complex, and female epigynum with a median sclerotized plate.

The genus cortains a small number of species, approximately five at present. *Asceua wallacei* Bosmans and Hillyard – a forest litter species – was described recently from Sulawesi, Indonesia (Bosmans and Hillyard 1990).

Asceua gruezoi Barrion and Litsinger
(Figs 181a–e, 182a–e)

Asceua gruezoi Barrion and Litsinger, 1992. Asian Int. J. Life Sci. 1(1&2): 46–51.

Description:
Male (Fig. 181a–e): Total length 2.25 mm. Cephalothorax 1.10 mm long, 0.85 mm wide, 0.80 mm high. Abdomen 1.15 mm long, 0.80 mm wide, 0.80 mm high. Cephalothorax reddish brown, with grayish marginals and foveal area, subglobular and convex. Eight eyes in two rows, AE straight, equally spaced, and shorter than the strongly procurved PE row. Eye diameter (mm): AME = 0.10, ALE = PME = PLE = 0.08. Eye separation (mm): AME–AME = AME–ALE = 0.03, PME–PME = 0.09, PME–PLE = 0.05. MOQ narrower in front (0.22 mm) than behind (0.24 mm). Clypeus height very large, 3.3 times AME diameter. Sternum yellowish brown, rather smooth with few fine hairs, and nearly as long as wide. Labium similar in color to sternum, as long as wide to slightly longer than wide. Maxillae subtriangular, yellow, with apices converging. Chelicerae vertical reddish brown, promargin with two teeth and one in retromargin. Legs yellowish brown, except gray band in midlength of femora I–IV, all coxae yellow, tibiae without ventral spines, middorsal of tibiae with a long trichobothrium, basal one fifth of metatarsi IV and subapex each with long trichobothria dorsally, middorsal tarsus with one long trichobothrium. Leg formula 1432. Pedipalp about one half length of leg I; tibia with five apical and two subbasal processes, with two relatively long hairs at midlength of process; cymbium strongly flattened retrolaterally, spineless apically, and deeply concave in the middle; embolus long and hair-like towards apical one half.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.90	0.25	0.80	0.80	0.55	3.30
2	0.65	0.25	0.60	0.60	0.45	2.55
3	0.70	0.25	0.60	0.80	0.40	2.75
4	0.80	0.25	0.75	0.95	0.50	3.25
Pedipalp	0.47	0.19	0.20	–	0.80	1.60

Abdomen subglobular, longer than wide, black except a pair of longitudinal parallel yellow bands anteriorly and three yellow transverse concave bands posterior to the longitudinal band. Venter yellow except midventrolateral black spot and blackish brown sides of yellow spinnerets, borne on a subrectangular yellow plate.

Female (Fig.182a–e): Total length 2.45 mm. Cephalothorax 1.15 mm long, 0.78 mm wide, 0.90 mm high. Abdomen 1.30 mm long, 0.83 mm wide, 0.90 mm high. Cephalothorax as in male, except for the V-shaped grayish black band in the dorsum anterior to the short black fovea. Eight eyes in two rows, shorter AE row straight and slightly longer PE row strongly procurved. Eye diameter (mm): PLE = 0.080, AME = 0.080, ALE = 0.075, PME = 0.060. AE equally spaced, separated from each other by one eighth AME diameter. PE separated equally by one AME diameter. MOQ wider behind than in front. Clypeus height very large, 3.3 times AME diameter. Sternum, labium, and maxillae as in male. Chelicera with two promarginal teeth, apical one the largest, and retromargin with one. Legs yellowish brown with gray-brown band in midfemora I–IV, subbasodorsal of femur with a moderately robust spine, tibia I with a long median trichobothrium and a sub-

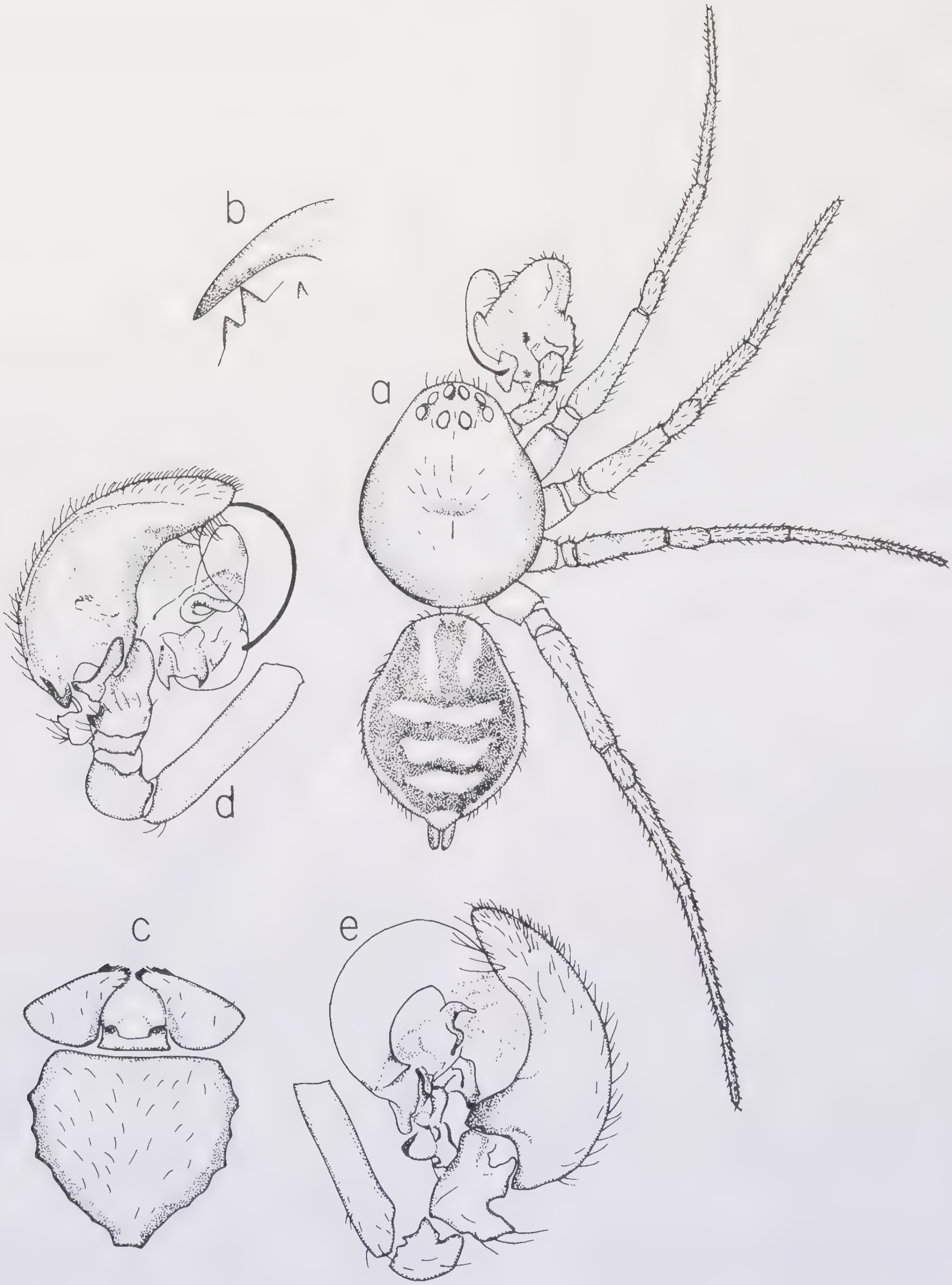


Fig. 181. Male *Asceua gruezoi* Barrion and Litsinger (a); cheliceral teeth with two in the promargin (b); sternum, labium, and maxillae (c); and lateral views (de) of pedipalp.

basodorsal shorter trichobothrium, apicoventrals of metatarsi II and III with a mass of black hairs and a long trichobothrium in each metatarsus subapicodorsally, leg segments without spines, except femora. Leg formula 4123. Pedipalp yellowish brown with a tarsal claw, total length shorter than femur IV plus patella IV, nearly as long as combined length of femur I and patella I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.75	0.25	0.68	0.65	0.45	2.78
2	0.66	0.28	0.53	0.60	0.41	2.48
3	0.60	0.20	0.55	0.60	0.42	2.37
4	0.83	0.28	0.70	0.90	0.50	3.21
Pedipalp	0.33	0.15	0.23	-	0.30	1.01

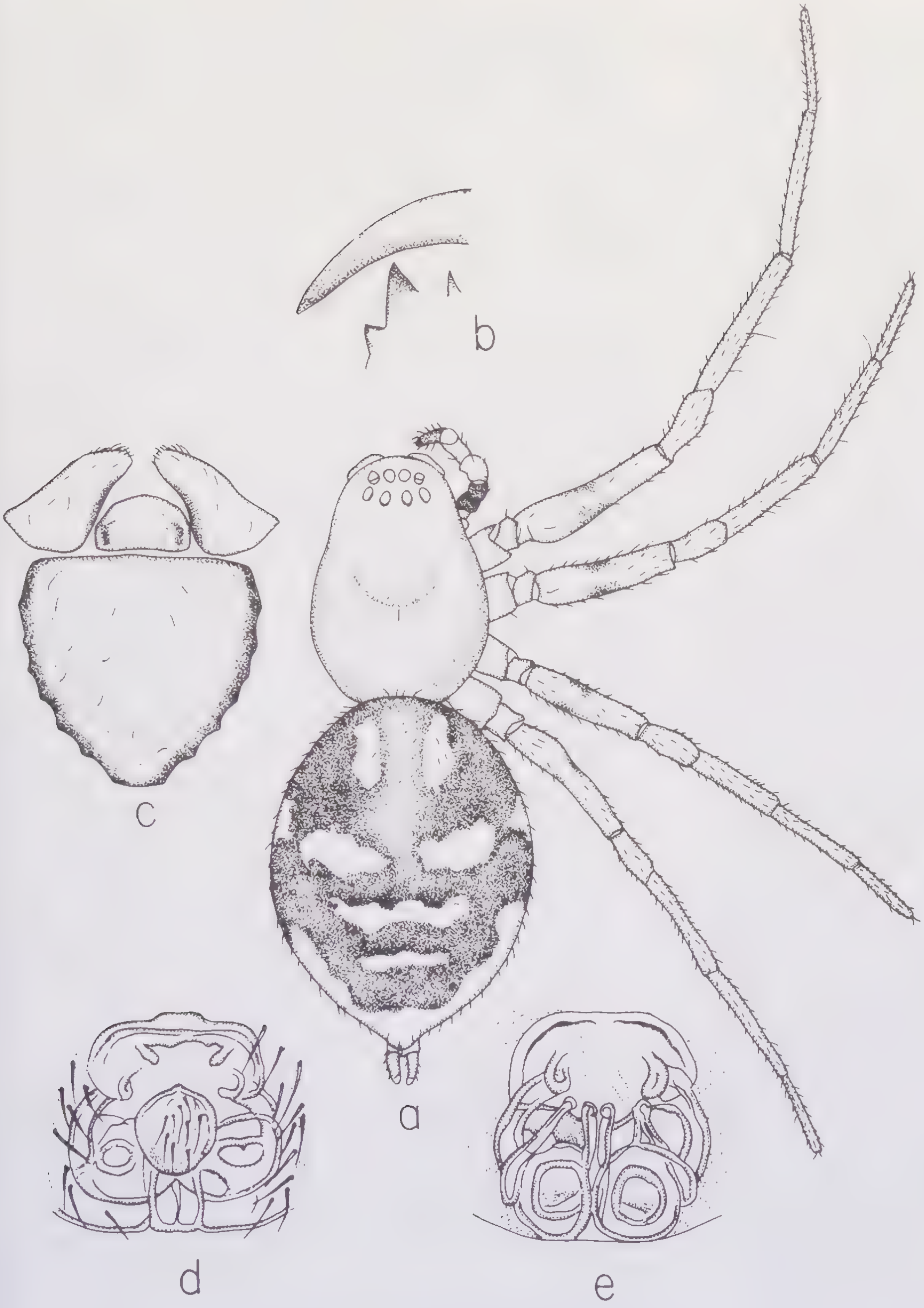


Fig. 182. Female *Ascena gruezoi* Barrion and Litsinger (a); cheliceral teeth with one in the retromargin (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Abdomen subglobular, pattern as in male, spinnerets yellow, anterior pair much longer than the posterior pair. Epigynum with a median subspherical plate and a pair of cylindrical tubes posterior to it, towards the epigastric furrow; spermathecae globular near the furrow.

Etymology: Named in honor of my friend and colleague Dr William Sm. Gruezo, director of the UP Los Baños Museum of Natural History, Los Baños, Laguna.

Natural history: The holotype male and paratypes (two females and one male) were extracted from soil debris and litter in upland rice in July.

Material examined: PHILIPPINES: *Luzon Is.*: Quezon Prov., Real, Llavac Vill., two males and two females, 15 July 1985, M. Perez and Ben Garcia.

Distribution: Philippines.

Genus *Langbiana* Hogg

Langbiana Hogg, 1922, Proc. Zool. Soc. Land. 1922: 286.

Suffucioides Jezequel, 1964. Bull. Mas. Natn. Hist. Nat. Paris 36: 334.

Langbiana Hogg is a paleotropical genus of zodariids or ant-eating spiders, consisting of about 45 nominal species. It has relatively small distribution ranges and shows strong manifestations towards endemism (Bosmans and Hillyard 1990). Members of the genus are medium-sized spiders, 4–8.00 mm long, with ovoid convex carapace, having reticulated integument, distinct fovea, poorly indicated cervical groove, usually dark colored, with cephalic sometimes paler; eyes in two rows, AE straight to slightly procurved and PE strongly procurved, eyes subequal in size or AME the largest; AME separated by 0.4–0.8 AME diameter, AME from ALE by 0.3–1.2 AME diameter; PME separated by about AME diameter, ALE from PLE by 1.6–3.1 AME diameter; MOQ 1.0–1.5 times wider in front than at back and 1.0–1.35 times longer than wide; height of clypeus three to six times AME diameter; chelicerae bear lateral groove with few frontal hairs, promargin with conspicuous tuft of setae; fang small, groove without teeth; maxillae strongly converging; labium similar to an equilateral triangle; sternum with short setae, laterally serrated due to coxal extensions, posterior end narrowly truncate to blunt between coxae IV; pedipalp of female strong, tibia shorter than tarsus, both with developed ventral and lateral spines, tarsal claw with many teeth; leg orange-brown, often with bands, formula 4123 or 4132; metatarsi II and III with a dense mat of setae; tarsi with long trichobothria and three-clawed; male pedipalp with thick distolateral apophysis; cymbium bears a strong ridge laterally, may extend towards tip; bulbus large with well-developed chitinous tegular apophysis with teeth or ridges; chitinous conductor distally excavated to house tip of embolus; basally broad, orientated laterally, posteriorly, or mesially, with large anterior membrane terminating in a thread-like filament of variable length, with teeth or bifurcations. Epigynum simple, consisting of a small hairless plate bordered by a chitinous ridge, with two anterior hairless cavities, vulva with short to long coiled ducts, depending on embolus length. Abdomen ovoid, dark dorsally, anterodorsally coriaceous or with scutum, dorsally with light spots; venter sclerotized in front of spinnerets and in front of genital slits, often a row of small spines present anterior to the spinnerets (Bosmans and Van Hove 1986; Bosmans and Hillyard 1990).

Langbiana panchoi Barrion and Litsinger
(Figs 183a–c, 184a–d)

Langbiana panchoi Barrion and Litsinger, 1992. Asian Int. J. Life Sci. 1(1 & 2): 51–56.

Description:
Female (Fig. 183a–c): Total length 3.65 mm long. Cephalothorax 1.80 mm long, 1.20 mm wide, 1.10 mm high. Abdomen 1.85 mm long, 1.35 mm wide, 1.40 mm high. Cephalothorax reddish brown, convex, longer than wide, and with black short fovea and bases of eyes. Eight eyes in two procurved rows, AE slightly recurved and PE strongly procurved. Eye diameter (mm): AME = 0.13, PLE = 0.11, PME = 0.09. Eye separation (mm): AME–AME = AME–ALE = 0.08, PME–PME = 0.10, PME–PLE = 0.13, PLE–ALE = 0.05. MOQ slightly wider in front (0.30 mm) than behind (0.29 mm), anterior width shorter than height (0.33 mm). Clypeus height large, 4.15 times AME diameter, slightly shorter than height of chelicerae (0.58 mm). Sternum light reddish brown with black hairs, wider than long, serrated laterally, straight anteriorly, and narrowly blunt between coxae IV. Labium subtriangular, similar in color to sternum. Maxillae brownish yellow, scopulae with apices strongly converging. Chelicerae vertical, slightly longer than height of clypeus, with black hairs dorsad of promargin. Legs yellowish brown except reddish brown femora I–IV; tibiae I–IV each with four ventral spines with I (two prolateroventrals (pvl) and two retrolateroventrals (rvl)) arranged differently, II with one pvl and three rvl spines, III has one rvl and three pvl, similar to IV, ventral tip of metatarsus I with a pair of distal spines, II has four arranged similarly to tibia II, III with four (two pvl and two rvl), and IV with five (three pvl and three rvl). Apicoventral parts of metatarsi II–IV with black setae. Leg formula 4123, with three-clawed tarsi. Pedipalp with spinous tarsus, 1.6 times longer than tibia.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.13	0.40	1.00	0.85	0.70	4.08
2	1.00	0.38	0.82	0.80	0.65	3.65
3	0.88	0.45	0.78	0.88	0.60	3.59
4	1.25	0.48	1.20	1.35	0.90	5.18
Pedipalp	0.50	0.29	0.25	–	0.41	1.45

Abdomen black, clothed with fine hairs, ovoid, with four pairs of chalk-white median spots, broadest in the second pair, starting from the anterior, laterals each with three larger chalk-white spots, venter yellowish gray, except brown epigastric furrow and 'mouth-like' epigynum with transverse v-shaped sclerotized lateral margins. Posteroventral tip of abdomen with 11 spines in a transverse row. Anterior spinnerets orange-yellow, robust, and twice longer than the posterior pair.

Male (Fig. 184a–d): Similar to the female except body and leg measurements. Total length 3.33 mm long. Cephalothorax 1.70 mm long, 1.25 mm wide, 1.20 mm high. Abdomen 1.60 mm long, 1.10 mm wide, 1.10 mm high. Cephalothorax reddish brown, with light v-shaped band anterior to the black fovea. Eight eyes arranged as in female, AME > PLE ⩾ ALE > PME. MOQ wider in front than behind. Clypeus height large, nearly three times AME diameter, and twice that of cheliceral length in frontal view. Sternum reddish brown, slightly wider than long. Labium and maxillae conform with male. Legs yellowish brown with reddish brown femora I–IV, all coxae yellow, ventral spines in tibia I = 1-2-1-2 (two pvl and four rvl) or 1-2-2-2 (three pvl and four rvl) (in

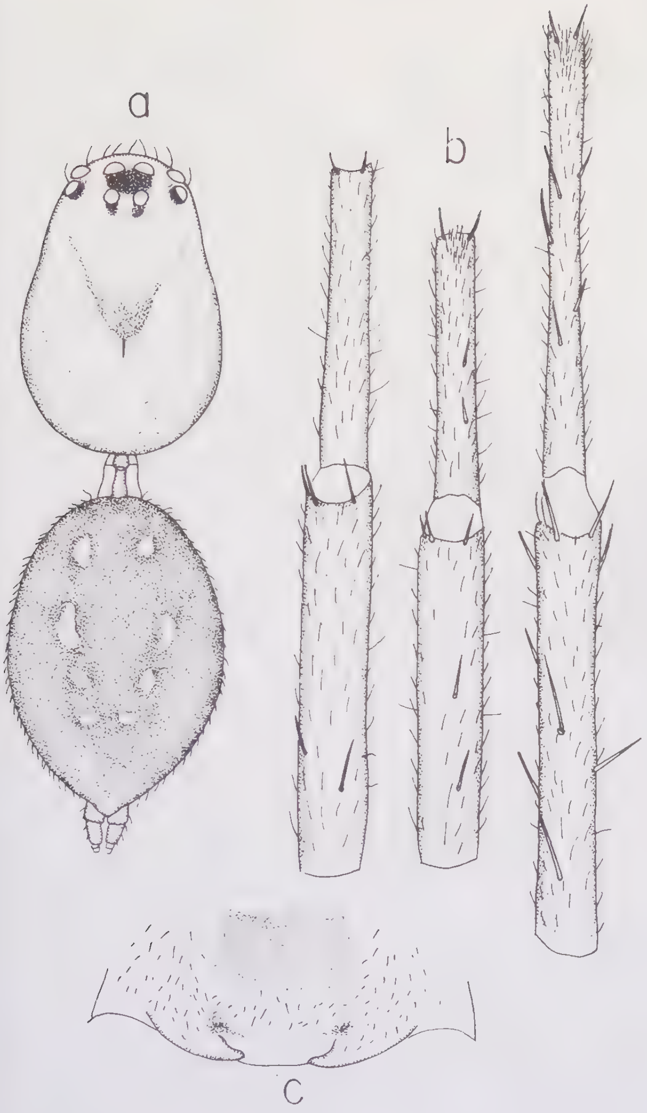


Fig. 183. Female *Langbiana panchoi* Barrion and Litsinger (a); venter of tibiae and metatarsi I, II, and IV (b); and epigynum (c).

some specimens it is 1-0-2 (one pvl and two rvl) or 1-1-2 (one pvl and three rvl), II = 1-1-2 (one pvl and three rvl), IV = 2-1-2 (three pvl and two rvl); tarsi three-clawed; leg formula 4132. Pedipalp slightly shorter than femur IV plus patella IV, longer than femur III plus patella III and femur II plus patella II; PTA small but sclerotized, rounded apically, and directed laterally towards tegulum; tegular apophysis in retrolateral view J-shaped apically and basally; embolus thick and sclerotized, black, bifurcate at tip; tegular membrane with an erect tubercle behind tegular base; cymbium obliquely truncate in retrolateral view, apex pointed, with two spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.19	0.35	1.10	1.00	0.85	4.49
2	1.10	0.40	0.88	0.90	0.80	4.08
3	1.04	0.40	0.88	1.03	0.95	4.30
4	1.33	0.44	1.24	1.63	0.96	5.60
Pedipalp	0.58	0.25	0.20	–	0.58	1.61

Abdomen as in female dorsally, midventer yellow, midapical venter brown, posterior one third grayish brown, and posterior tip with a transverse row of 10–12 short spines.

Etymology: Dedicated to Prof. Juan V. Pancho, a plant systematist.

Natural history: The adult female, subadult male, and three spiderlings were collected from pitfall traps set in upland field in July to August and February to March.

Material examined: PHILIPPINES: *Luzon Is.*: Laguna Prov., Caliraya, Manipon Vill., one female, 17 July 1986, M. Perez; three immatures and one subadult male, 14 August 1985, M. Perez and A.T. Barrion; Quezon Prov., Real, Llavac Vill., four males and two females, 5 February 1985, R. Apostol and M. Perez, two males, 25 February 1985, M. Perez and B. Garcia, and two males, 4 March 1985, E. Rico and B. Garcia.

Distribution: Philippines.

Langbiana pricei new species
(Fig. 185a–f)

Description:

Male: Total length 8.20 mm. Cephalothorax 3.85 mm long, 2.80 mm wide, 2.75 mm high. Abdomen 4.35 mm long, 2.00 mm wide, 2.50 mm high. Cephalothorax uniformly reddish brown, with a short black longitudinal fovea and narrow black eye margins in PME and LE. Cephalic boundary not distinct from the thoracic area. Posterior end of the thoracic area rounded. Eight eyes, uniformly clear, in two procurved rows, AE less procurved than PE. Eye diameter (mm): AME = 0.28, ALE = PLE = 0.18, PME = 0.15. Eye separation: AME–AME 0.40 AME diameter, AME–ALE one half ALE or one third AME diameter, PME–PME 0.64 AME diameter, PME–PLE as long as one AME diameter. Median ocular quadrangle wider in front than behind and wider than long. Clypeus height distinctly large, 1.03 AME diameter. Sternum brownish red, as long as broad, lateral margins serrated irregularly, posterior end with two notches and a blunt tip in the center. Labium longer than wide, same color as sternum except light yellow distal margin, moderately narrowed toward apex. Maxillae brown in the basal two thirds and yellow in the distal one third, provided with black scopulae, apices strongly converging. Chelicerae short but robust basally, promargin with a dense hair tuft. Legs uniformly yellowish brown, long, and slender. Spination in femora I = 3-0-1-0, II = 3-0-2-1, III = 6-0-0-2, IV = 5-0-0-1, tibiae I = 0-8-2-0, II = 0-8-2-0, III = 2-7-2-3, IV = 7-9-2-1 (left leg)/2-7-2-1 (right leg). Tibia I l/d = 8.82, metatarsus

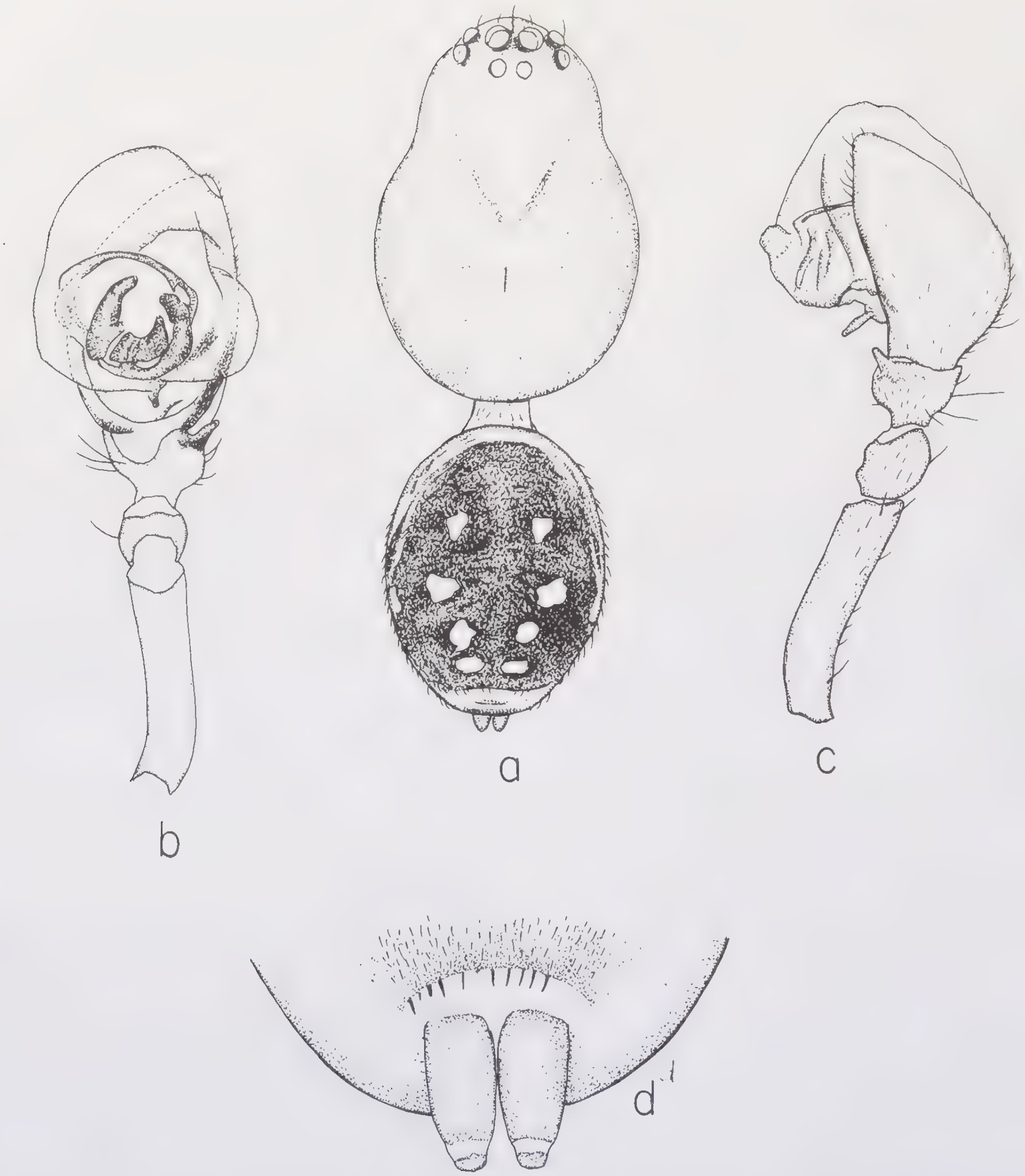


Fig. 184. Male *Langbiana panchoi* Barrion and Litsinger (a); ventral (b), and retrolateral (c) views of pedipalp; and posterior tip of abdomen (d).

I/tarsus I = 1.48. Leg formula 4123. Pedipalp almost as long as combined length of femur I and patella I, embolus not split at apex, retrolateral tibial apophysis (RTA) slightly curved, creating a deep notch between RTA and the other tooth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.25	1.13	3.35	3.55	2.40	13.68
2	2.93	1.05	2.80	3.05	2.05	11.88
3	2.90	1.08	2.38	2.93	1.55	10.84
4	3.60	1.13	3.25	4.00	1.80	13.78
Pedipalp	1.55	0.55	0.50	–	1.80	4.40

Abdomen elongate, black with five transverse yellow bands, posteriormost band broad, connected by a longitudinal yellow band anteriorly to the fourth band. Laterals with three oblique and one longitudinal yellow bands. Venter with four longitudinal yellow bands, median bands fused posteriorly. Spinnerets yellow-brown, posterior pair moderately small and barely half the length of the anterior pair.

Etymology: The species name was dedicated to Dr Ed Price (former Economist at IRRI), who introduced us in the slash-and-burn upland rice in Siniloan, Laguna and Real, Quezon.

Natural history: Three males were all taken from KLT collections in August to November.

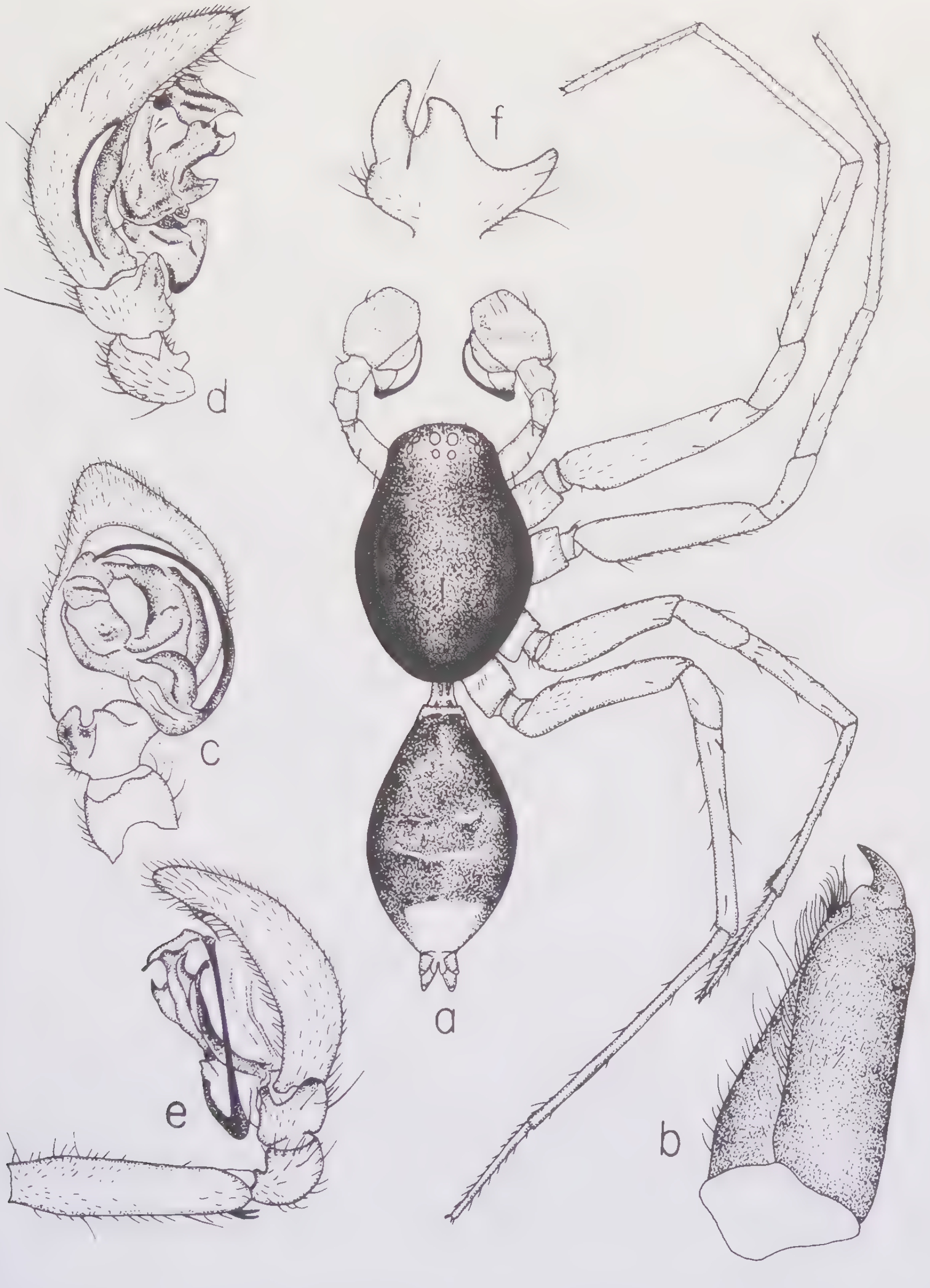


Fig. 185. Male *Langbiana pricei* n. sp. (a); right chelicera (b); ventral (c) and lateral (de) views of pedipalp; and tibial apophysis (f).

Material Examined: PHILIPPINES: *Luzon Is.*: Quezon Prov., Real, Llavac Vill., holotype male, 22 August 1984, A.T. Barrion; one male paratype, 26 September 1984, A.T. Barrion, one male paratype, 7 November 1984, A.T. Barrion.
Distribution: Philippines.

Langbiana slaburuprica new species
(Fig. 186a–h)

Description:
Male: Total length 6.65 mm. Cephalothorax 3.35 mm long, 2.35 mm wide, 2.25 mm high. Abdomen 3.30 mm long, 2.20 mm wide, 2.10 mm high. Cephalothorax reddish brown, except black longitudinal fovea, subglobular, with cephalic area slight elevated posteriorly and distinguished from the thoracic area by the pale red-brown color. Eight eyes in two rows, all homogeneous and clear, PE more strongly procurved than the straight to slightly procurved AE. Eye diameter (mm): AME = 0.25, PME = PLE = ALE = 0.15. Eye separation: AME–AME 0.40 AME diameter, AME–ALE a little over one half of AME diameter, PME–PME 0.72 AME diameter, PME–PLE four apart, 1.36 AME diameter. Median ocular quadrangle (MOQ) wider in the anterior than the posterior, anterior width as long as the length of MOQ. Clypeus height noticeably very large, ca. four

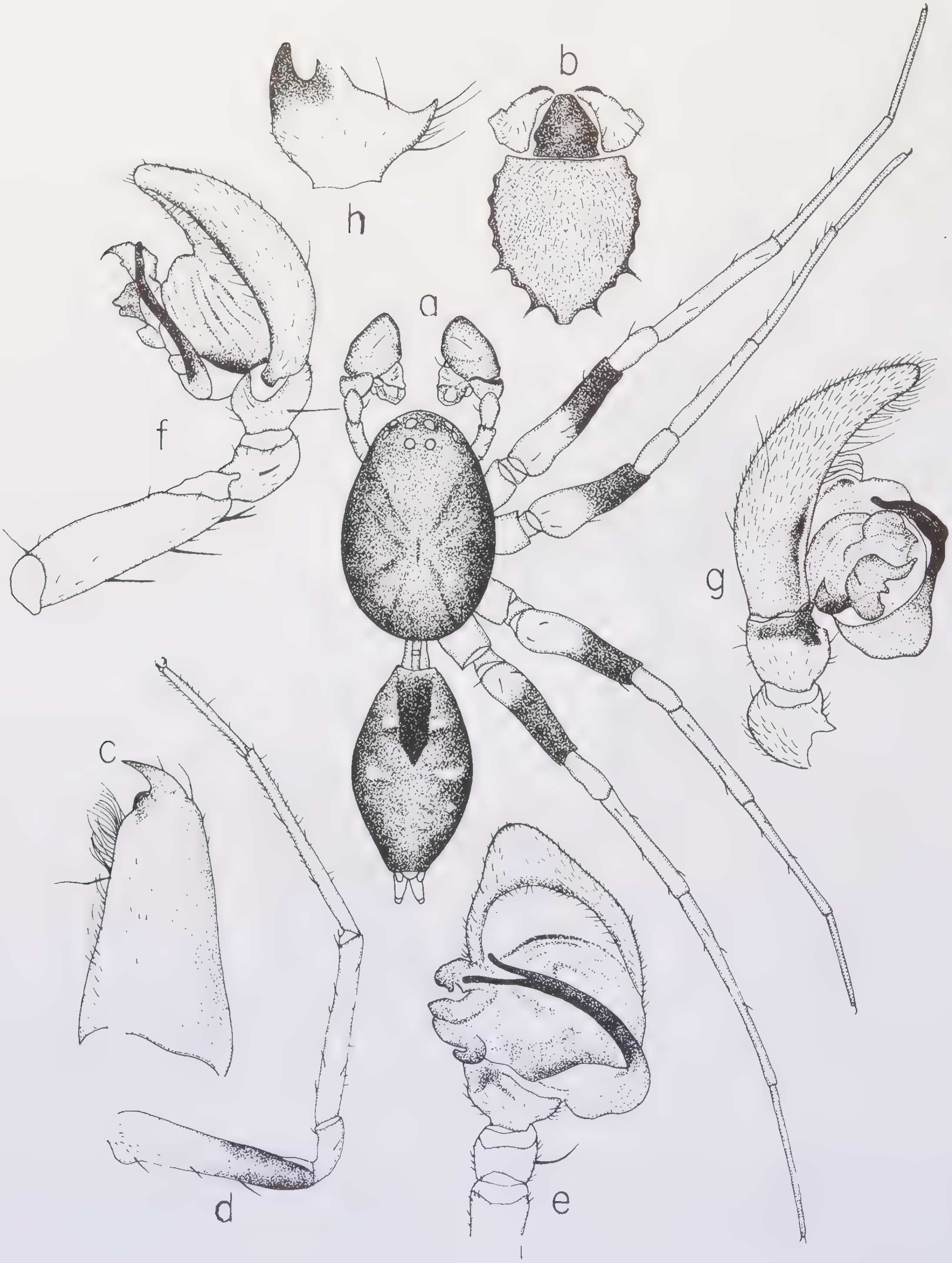


Fig. 186. Male *Langbiana slaburuprica* n. sp. (a); sternum, labium, and maxillae (b); right chelicera (c); leg I (d); ventral (e) and lateral (fg) views of pedipalp; and ventral view of tibia (h).

times AME diameter. Sternum as long as wide, brownish red, with truncated anterior margins, serrated lateral edges, and posterior end narrowing to a blunt tip. Labium about as long as wide and above midlength same color as sternum, except yellow apical one half. Maxillae longer than wide, brown, with yellow strongly converging apices provided with black scopulae, apical one half of each endite with four or five long hairs. Chelicerae same color as sternum, robust basally, promargin and retromargin toothless, promargin with a thick hair tuft instead of teeth. Legs long and slender, brownish red, except yellow coxae and bases of femora, posterobasal part of femora I and II, end anterobasal part of femur III swollen and reddish brown. Spination in femora I = 4-0-1-1, II = 4-0-2-2, III = 3-0-3-1, IV = 6-0-1-1; tibiae I = 0-6-2-0, II = 0-6-2-0, III = 2-6-3-3, IV = 2-6-3-4; metatarsi I = 0-6-1-0, II = 2-7-2-0, III = 0-7-3-3, IV = 0-7-3-3. Tibia I l/d = 7.58, metatarsus I/tarsus I = 1.41. Tarsi two-clawed. Leg formula 4123. Pedipalp nearly as long as metatarsus IV, cymbium large and strongly concave with two spines at apex, embolus divided into two in the apical one half of its length, retrolateral tibial apophysis (RTA) short but wide, with a blunt rounded tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.55	0.90	2.50	2.40	1.70	10.05
2	2.40	0.93	2.00	2.30	1.65	9.28
3	2.25	0.93	2.05	2.55	1.40	9.18
4	2.80	0.95	2.75	3.30	1.78	11.58
Pedipalp	1.13	0.45	0.30	–	1.40	3.28

Abdomen elongate, dull gray to black, with reddish brown cardiac area and four pairs of chalk-white irregularly ovate spots dorsally. Posterior spinnerets small and cylindrical, with a minute subglobular segment II, median pair thin and cylindrical, about one half diameter of posterior spinnerets. Anterior spinnerets largely cylindrical, segment II small and wider than long.

Etymology: Refers to the species habitat, slash-and-burn upland rice.

Natural history: Five males were all isolated from the August–September kerosene light trap (KLT) collections.

Material examined: PHILIPPINES: *Luzon Is.*: Quezon Prov., Llavac Vill., holotype male, 21 August 1984, A.T. Barrion; four male paratypes, 21–26 September 1984, same data as holotype.

Langbiana calilungae Barrion and Litsinger
(Fig. 187a–d)

Langbiana calilungae Barrion and Litsinger, 1992. Asian Int. J. Life Sci. 1 (142): 56–58.

Description:

Male: Total length 6.00 mm. Cephalothorax 3.00 mm long, 2.20 mm wide, 1.90 mm high. Abdomen 3.00 mm long, 1.50 mm wide, 1.90 mm high. Cephalothorax dark red, longer than wide, convex, with fovea visible. Eight eyes in two rows, AE strongly recurved and shorter than procurved PE row. Eye diameter (mm): AME = 0.28, PLE = 0.18, PME = 0.15, ALE = 0.14. Eye separation (mm): AME–AME = AME–ALE = 0.08, PME–PME = 0.13, barely one half AME diameter, PME = PLE = 0.26, almost as long as AME diameter. MOQ wider in front (0.53 mm) than behind (0.45 mm), anterior width as long as height. Clypeus height large, 3.2 times AME diameter. Sternum reddish, as long as wide, serrated laterally, straight anteriorly, and narrowly truncate posteriorly between coxae IV. Labium same color as sternum, except yellow, semitriangular, wider than long, and apex slightly rounded. Maxillae yellow-brown, with black scopulae on yellow apices of maxillae, apices converge. Chelicerae vertical, dark reddish brown except short yellowish brown fang. Legs yellowish brown with few spines, apices of metatarsi II–IV with a moderately thick mass of black hairs. Femur I with a prolateral spine near apex. Tibia I with one small submedian and a pair of apical spines. Metatarsus I with an apical pair of ventral spines. Metatarsus longer than tibia except in leg I. Metatarsus I/tarsus I = 1.32. Leg formula 4132. Pedipalp yellow except brownish cymbium, patella and tibia subglobular, RTA wide basally with a curved and sharply pointed tip directly ventrally, embolus base located basad of tegulum and embolus split in two apically towards conductor, tegular apophysis anterior to tegulum. Cymbium scoop-like with two spines apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.80	0.85	2.95	2.50	1.90	11.00
2	2.40	0.80	2.00	2.30	1.65	9.15
3	2.30	0.70	2.10	2.40	1.90	9.40
4	3.05	0.90	2.90	3.60	1.45	11.90
Pedipalp	1.10	0.48	0.30	–	1.30	3.18

Abdomen black with three pairs of white spots dorsally, one white spot each midlaterally, and a moderately broad white band posterolaterally near the spinnerets. Venter light gray with four pale white longitudinal bands, epigastric furrow and book lung area brown, posterior tip with a transverse row of 20 or more short black clubbed setae. Spinnerets yellow with orange tinge.

Etymology: Named after my adviser and professor, Dr Venus J. Calilung.

Natural history: D-Vac-collected from upland rice in August.

Material examined: PHILIPPINES: *Luzon Is.*: Laguna Prov., Los Baños, CES, holotype male, 25 August 1989, A.T. Barrion.

Distribution: Philippines.

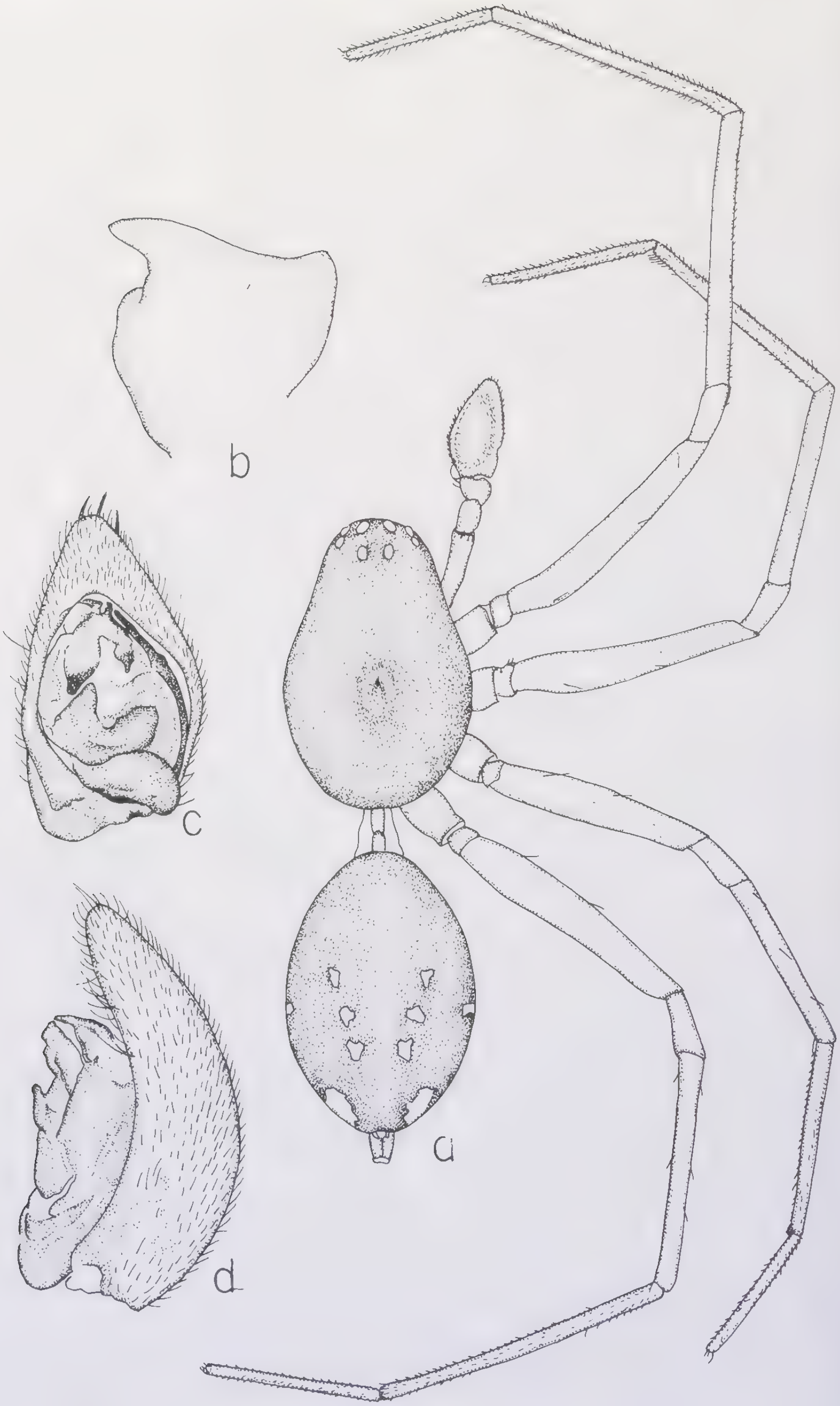


Fig. 187. Male *Langbiana calilungae* Barrion and Litsinger (a); retrolateral tibial apophysis (b); and ventral (c) and retrolateral (d) views of pedipalp.

FAMILY OXYOPIDAE THORELL

(Lynx Spiders)

The lynx spiders are handsome hunters that have become specialized for a life on plants. They run over vegetation with great agility, leaping from stem to stem with a precision excelled only by the true jumping spiders. A few are more indolent, and sit in flowers or press their bodies close against dried stems while they await the appearance of suitable prey. The lynxes are diurnal or mostly active during daytime, aided by a relatively keen eyesight, comparable to that of the wolf and fishing spiders. Although they trail a dragline even when jumping, silk does not enter much into their lives and they never make use of webs to capture their prey. The members of the family are easily distinguished by eye arrangement and conspicuously spinose legs; chelicerae with both boss and scopulae, flattened anterior faces and the fang margins short and smooth with a single small tooth, eight eyes of unequal sizes, all dark in color and arranged in two rows so curved as to appear like four rows of two each, anterior row recurved and posterior procurved, eye area hexagonal, anterior medians the smallest and anterior laterals the largest; clypeus high, being several times the diameter of AME; labium free and long; endites long and parallel, palp of the female with a claw; leg spines standing out at a considerable angle; trochanter slightly notched below; tarsi without scopulae, with three claws, of which the superiors are similar and pectinate in a single row and the inferior claw has two or three teeth; few trichobothria in two irregular rows on tibiae, metatarsi, and tarsi; palpal organ simple; abdomen strongly tapered posteriorly, integument with scale-like as well as simple hairs.

The family comprises 11 genera, with about 370 species worldwide (Brady 1964).

KEY TO THE GENERA AND SPECIES OF LYNX SPIDERS

1 Retromargin without teeth; carapace more flattened, less convex and tapers gradually to the sides; PE slightly procurved (Figs 188b, 189a); inner margins of chelicerae with three pairs of setae; sternum uniformly covered with setae and maxillae long and slender (Fig. 189c); conical prominence of male's cymbium moderately rounded; tegulum with long spoon-like processes viewed retrolaterally (Fig. 188g) and bears a median blunt tooth (Fig. 188h) viewed ventrally; epigynum with a strongly recurved anterior margin terminating laterally at each side of the median thumb-like process (Fig. 189fg). .... *Peucetia myanmarensis* n. sp. (Figs 188a–h, 189a–g)

– Retromargin with a single tooth; carapace high and convex, sloping sharply at the thoracic declivity and at sides. 2

2 Female. 3

– Male. 6

3 Abdomen tapers anteriorly and posteriorly, widest medially (Fig. 190a); CL/CW = 1.11, AbL/AbW = 1.74; order of length of each segment 1234 except metatarsi with 1243 and patella I as long as II; epigynum with a transverse C-shaped posterior margin, terminating in subovoid and diverging spermathecae (Fig. 190hi). .... *Oxyopes bikakaeus* n. sp. (Fig. 190a–i)

– Abdomen slender and nearly parallel-sided or broadest subanteriorly and tapering posteriorly. 4

4 Abdomen slender, with lateral longitudinal brown bands, and almost parallel-sided; brown carapace with three broad white longitudinal bands (Fig. 192a); CL/CW = 1.21, AbL/AbW = 3.69; epigynum wih a W-shaped median mark, outer arm terminating in transverse ovoid spermathecae pointing towards each other (Fig. 192a); spermathecae bear a long arm in ventral view (Fig. 192e); femur I longer than IV; metatarsus IV longer than I. .... *Oxyopes tiengianensis* n. sp. (Fig. 192a–e)

– Abdomen not as above; CL/CW = 1.16–1.19; AbL/AbW = 2.59–2.78. 5

5 Femur length in decreasing order 4123, patella 2413, and metatarsus 4213; CL/CW = 1.19, AbL/AbW = 2.59; PLE larger than PME; clypeus height five times AME diameter; abdomen with four or five diagonal gray bands, interspersed with white laterally (Fig. 193a); epigynum V-shaped, with bluntly rounded posterior margin, and diverging spermathecae located anteriorly (Fig. 193c). .... *Oxyopes javanus* Thorell (Fig. 193a–c)

– Femur order of length 1243, similar to patella, metatarsus order of length 1423; CL/CW = 1.16, AbL/AbW = 2.78; PME = PLE; clypeus height 7.25 times AME diameter; abdomen with a pair of parallel dorsolateral gray bands and strongly diverging spinnerets (Fig. 195a); epigynum W-shaped with a broad tongue-like plate in the posterior epigynal margin (Fig. 195fg). .... *Oxyopes matiensis* n. sp. (Fig. 195a–h)

6 Sternum with a lateral gray to black spot opposite a pair of coxae (Fig. 197a); CL/CW = 1.18, AbL/AbW = 2.28; abdomen with three to five comma-like or oblique yellow stripes on each side, becoming shorter and narrower posteriorly and bordered black to gray in between (Fig. 197b); venter of pedipalp's femur with long hairs (Fig. 197f); RTA reduced and intermediate tibial apophysis prominently black, sclerotized and plate-like truncate apically (Fig. 197g). .... *Oxyopes aspirasi* n. sp. (Fig. 197a–h)

– Sternum without lateral gray to black spot opposite a pair of coxae. 7

7 Retrolateral tibial apophysis (RTA) well developed. 8

– RTA absent to weakly developed. 9

8 Clypeus height large, six times AME diameter (Fig. 194ab); CL/CW = 1.35, AbL/AbW = 3.20; metatarsi I–IV longer than tibiae I–IV; metatarsus I/tarsus I = 2.29; RTA thick basally, process slender and long with rounded apex (Fig. 194cd). .... *Oxyopes javanus* Thorell (Fig. 194a–s)

– Clypeus height 4.42 times AME diameter (Fig. 198ab); CL/CW = 1.20, AbL/AbW = 2.94; metatarsus I shorter than tibia I (Fig. 198c), metatarsus IV as long as tibia I; metatarsus I/tarsus I = 2.90; RTA broad frontally but thin cross-sectionally, extended process narrowed apically, forming a rounded apex with a notch in the middle (Fig. 198df). .... *Oxyopes pingasus* n. sp. (Fig. 198a–f)

9 Metatarsus I shorter than tibia I, metatarsus IV about three fourths of tibia I; metatarsus I/tarsus I = 2.16; clypeus height 6.4 times AME diameter; CL/CW = 1.18, AbL/AbW = 2.15; abdomen orange-brown, with a pair of brown spots in apical one third (Fig. 191a); RTA poorly developed, unlike VTA, with a rounded tip (Fig. 191e,f). .... *Oxyopes bikakaeus* n. sp. (Fig. 191a–g)

– All metatarsi I–IV longer than tibiae I–IV. 10

10 Clypeus height 4.5 times AME diameter; CL/CW = 1.31, AbL/AbW = 2.59; metatarsus I/tarsus I = 2.29; abdomen orange-yellow except whitish yellow cardiac area and a black longitudinal lateral band converging posteriorly (Fig. 199a), venter yellow with a median longitudinal brown band forming a slender U-shaped pattern; RTA absent, replaced by white mass of hairs; blunt ITA present with a V-cavity between ITA and VTA (Fig. 199e); ratio of cymbium length and width = 1.88, cymbium slightly tapers apically. .... *Oxyopes lineatipes* (C.L. Koch) (Fig. 199a–f)

– Clypeus height more than five times AME diameter. 11

11 Clypeus height 7.5 times AME diameter; eye diameter: ALE > PLE > PME > AME; CL/CW = 1.12, AbL/AbW = 3.75; abdominal dorsum orange with longitudinal stripes (Fig. 196a); sternum with yellow spots (Fig. 196b); metatarsus I/tarsus = 2.42; venter of femur I with two rows of longitudinal gray to black stripes; tibia of pedipalp with a transverse median sclerotization and two truncate apophyses with a deep cavity in between (Fig. 196c); tegular apophysis slightly nipple-like (Fig. 196ef); slender part of cymbium approximately one third its total length (Fig. 196de). .... *Oxyopes matiensis* n. sp. (Fig. 196a–g)

– Clypeus height 5.75 times AME diameter; eye diameter: ALE = PLE > PME > AME; CL/CW = 1.10, AbL/AbW = 1.97; abdominal dorsum grayish brown with yellow dot-like specks (Fig. 200a); sternum without yellow spots (Fig. 200c); metatarsus I/tarsus I = 2.34; venter of femur I bears a longitudinal stripe and four spots (Fig. 200d); tibia (Fig. 200h–j) of pedipalp without a transverse median sclerotization and truncate apical processes; tegular process adjacent to circling embolus strongly V-shaped with nipple-like base (Fig. 200j); ejaculatory duct prominent ventrally (Fig. 200j); cymbium with a relatively slender pale yellow apical one third (Fig. 200h–j). .... *Oxyopes delmonteensis* n. sp. (Fig. 200a–j)

Genus *Peucetia* Thorell

Pasithea Blackwall, 1858, Ann. Mag. Nat. Hist. 3(1): 427.
Peucetia Thorell, 1869. On European Spiders, Uppsala 7: 196 (new name for *Pasithea* Blackwall preoccupied).

Members of the genus *Peucetia* Thorell are called green lynx spiders and appear like lycosids when viewed from above. The cephalothorax is less convex than that of *Oxyopes*; carapace narrow in the cephalic region, widening considerably posteriorly; face vertical, with sides of carapace and thoracic cavity not so steep; eyes occupy a comparatively smaller area, ALE the largest, AME smallest, PME and PLE subequal in size and larger than AME; length of eye rows: PLE > ALE > PME > AME; PME and PLE slightly procurved; labium longer than wide; maxillae very long, slightly enlarged distally, and more than length of labium, converging in front of it; legs very long compared to body length, with numerous black spines, leg formula 1243; male pedipalp with a prominent paracymbial process; epigyna highly variable in females, often plugged with a hard black matrix, deposited during or immediately after mating; abdomen very elongate, nearly cylindrical, tapering gradually behind to the spinnerets.

Peucetia Thorell has predominantly Ethiopian (25 species) and Neotropical (22 species) distribution. Several species, however, were reported in the Palearctic, Oriental, and Australian regions.

Peucetia myanmarensis new species
(Figs 188a–h, 189a–g)

Description:
Male (Fig. 188a–h): Total length 8.30 mm. Cephalothorax 3.80 mm long, 2.90 mm wide, 1.90 mm high. Abdomen 4.50 mm long, 2.10 mm wide, 2.00 mm high. Cephalothorax yellow except white mat of hairs in the eye area, yellowish brown setae in the cephalic area, brown patch in the lateral margins of carapace, and the long brown fovea situated at 0.63 of the entire length of the cephalothorax, narrow black margins. Eye diameter (mm): ALE = 0.20, PLE = 0.18, PME = 0.14, AME = 0.09. Eye diameter (mm): AME–AME = 0.12, AME–ALE = 0.08, ALE–ALE = 0.28, ALE–PME = 0.20, PME–PME = 0.70, PME–PLE = 0.15, PLE–PLE = 0.16. Clypeus height large, 7.10 times AME diameter. Sternum green with at least 25 long and erect brown hairs, slightly wider than long to as long as wide, anterior margin straight, lateral margins serrated, posterior end tapered between coxae IV, and with a sclerotized half-ring shaped ring beyond coxae IV and posterior tip of sternum and pedicel. Labium greenish yellow, longer (0.70 mm) than wide (0.50), reaching midlength of the similarly colored, slender maxillae. Apices of maxillae moderately converge and outer lateral midhalf slightly concave. Chelicerae yellowish

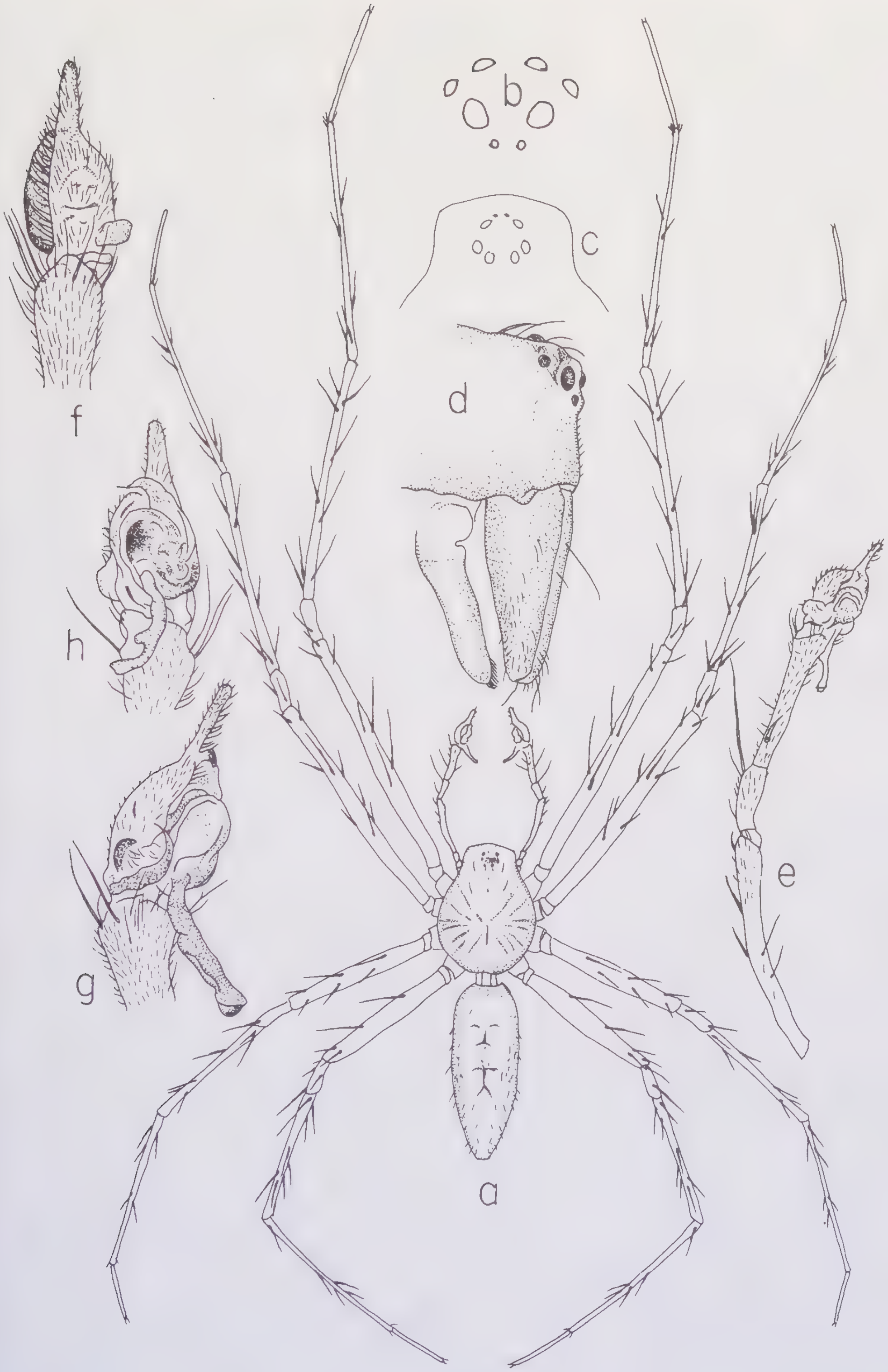


Fig. 188. Male *Peucetia myanmarensis* n. sp. (a); eye pattern (b); cepahalic area (c); lateral view of cephalic including maxillae and chelicera (d); entire pedipalp (e); and dorsal (f), retrolateral (g), and ventral (h) views of pedipalp with patella and tibia omitted.

green except short brown fang with a broad base, retromargin toothless, and promargin with a small tooth in a dense mat of yellow brown hairs. Legs yellow with brown spots on the bases of spines and setae, long, spinous, and slender. Femora I and II with similar spination = 3-0-3-3, tibia I = 2-4-2-2, metatarsus I = 0-7-3-3, femur IV = 3-0-3-2, tibia IV = 2-4-2-2, metatarsus IV = 0-7-3-3. Tm I = 0.85, II = 0.87, and IV = 0.79. Metatarsus I/tarsus I = 2.11. Tarsi three-clawed, each superior claw in leg I with five or six teeth. Leg formula

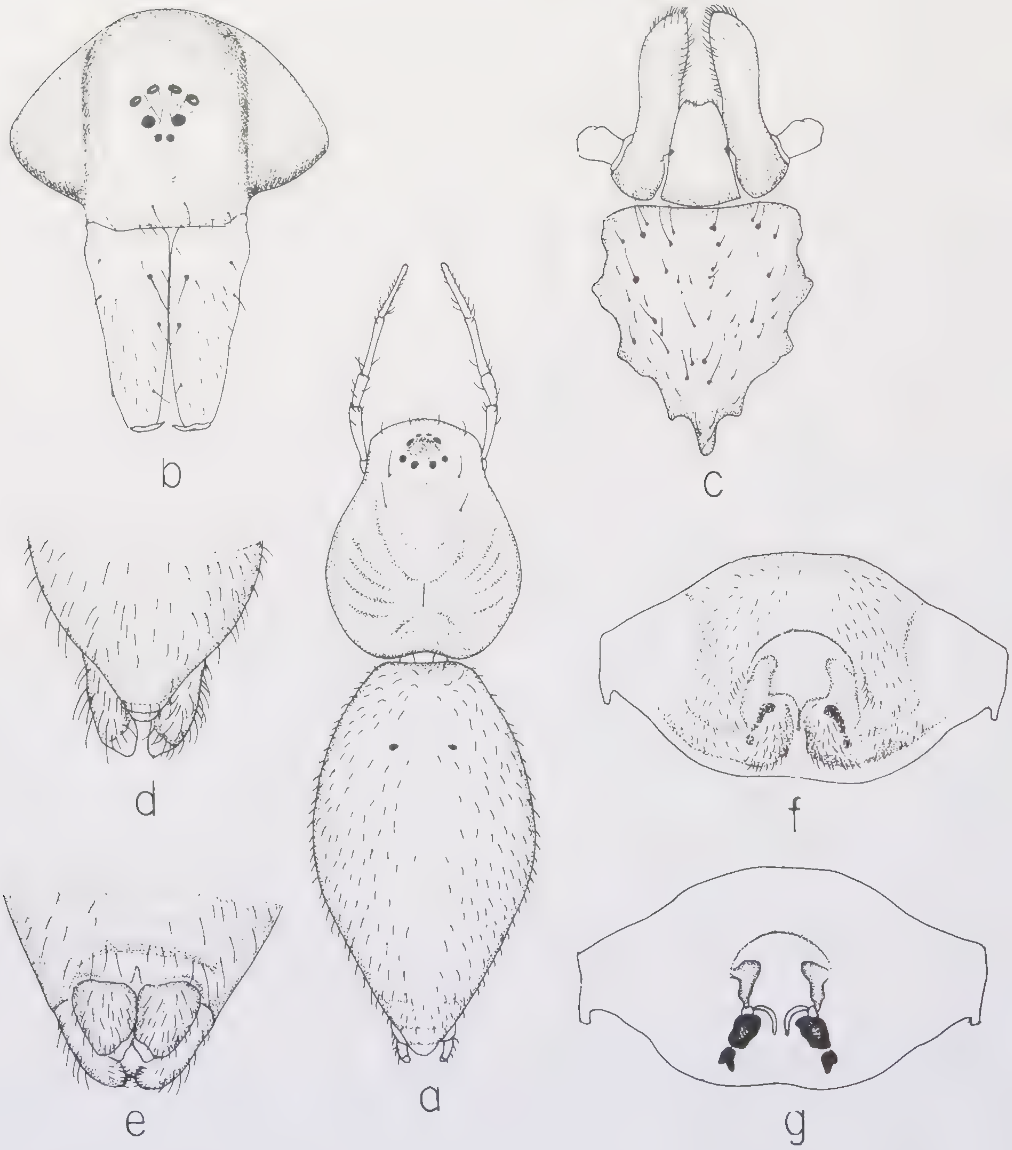


Fig. 189. Female *Peucetia myanmarensis* n. sp. (a); frontal view of carapace (b); sternum, labium, and maxillae (c); posterodorsal (d) and posteroventral (e) views of abdomen; and dorsal (f) and ventral (g) views of epigynum.

1243. Pedipalp longer than femora II–IV. Femur longer than tarsus or tibia, bears prolateral spine distally and four dorsal spines, with a distal pair. Tibiae with one long prolateral and one retrolateral spine each in basal one third, apex ring with at least 13 long spines. PTA moderately produced with eight setae towards its apex. Paracymbium sickle-shaped, curved apex projected towards tegulum. Tegular apophysis bears a long scoop-like process provided with a rounded tooth or swelling in the middle. Embolus short and thin, arising from baso-lateral of tegulum and terminating in the robustly sickle-shaped conductor anterior to tegulum. Cymbium with a thin blade-like outgrowth basally near paracymbium, slender tip with three or four hooked spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.50	1.50	8.15	9.30	4.40	30.85
2	6.00	1.40	6.60	7.00	2.80	23.80
3	4.90	1.25	4.70	5.10	1.70	17.65
4	5.70	1.30	5.40	6.10	1.80	20.30
Pedipalp	2.70	0.90	1.65	–	1.10	6.35

Abdomen green, 2.14 times longer than wide, and uniformly clothed with yellowish brown setae. Venter light green except the dark green book lungs. Spinnerets close together, anterior pair only slightly longer than the smaller but more green posterior pair.

Female (Fig. 189a–h): Similar to the male except in size and genitalia. Total length 14.60 mm. Cephalothorax 6.20 mm long, 4.60 mm wide, 3.70 mm high. Abdomen 8.40 mm long, 4.60 mm wide, 4.50 mm high. Eye diameter (mm): ALE = 0.30, PLE = 0.23, PME = 0.19, AME = 0.13. Eye separation (mm): AME–AME = 0.16, AME–ALE = 0.14, ALE–ALE = 0.43, ALE–PME = 0.28, PME–PLE = 1.20, PME–PLE = 0.25, PLE–PLE = 0.28. Clypeus height large, 8.15 times AME diameter. Sternum yellow, except brown bases of spinneret and setae, slightly longer (2.60 mm) than wide (2.20). Labium yellowish brown, longer (1.15 mm) than wide (0.90 mm), midapex concave, and reaches a little above midlength of slender, yellow maxillae with moderately converging apices. Apices of maxillae moderately rounded. Chelicerae yellow-brown, frontally triangular with three or four setae in a longitudinal row, promarginal apex with a protrusion lined with a dense mat of hairs, and inner subbase with a blunt transparent tooth. Legs as in male except femora I–IV with numerous brown spots. Leg formula 1243. Pedipalp single-clawed with five teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.80	2.30	8.35	8.00	3.65	30.10
2	7.10	2.10	7.00	6.50	2.75	25.45
3	6.10	1.90	5.10	4.90	1.95	19.95
4	6.00	2.00	5.65	5.80	2.10	21.55
Pedipalp	2.00	0.80	1.40	-	2.00	6.20

Abdomen green, widest medially, with a pair of yellow-brown spots in apical one fourth, entire dorsum lined with erect yellow-brown setae. Venter with a yellow-white median longitudinal band. Apices of spinnerets distinctly converging towards each other. Epigynum with a recurved anterior epigynal margin and a tooth-like process, each in the lateroanterior epigynal border, posterior epigynal margin notched medially and located anterior to the epigastric furrow.

Etymology: Named after the type locality.

Natural history: All the specimens were collected from cotton fields in April to June.

Material examined: MYANMAR: Rangoon, Meiltila, Tawma, holotype male, April–June 1984, two female paratypes and four spiderlings, same data as holotype, J.B. Guerrero.

Distribution: Myanmar.

Genus *Oxyopes* Latreille

Oxyopes Latreille, 1804, Nouv. Dict. Hist. Nat. 24: 135.

The genus characterized by the strongly procurved PE row, equidistant from each other; PLE and PME subequal in size, larger than AME but slightly smaller than ALE. AME smallest. Cephalothorax high and convex, cephalic area slightly elevated, sloping sharply at the thoracic declivity and laterally. Face almost vertical. Labium longer than wide. Maxillae exceed length of labium and converge on top of it. Abdomen elongate, widest behind base and tapering to the spinnerets. Legs very long, spinous, and usually with longitudinal gray bands in venter of femora, spines long and thick, formula 1243, 1,2=4,3, or 4123. The lower margin of the chelicera has one tooth. The egg sac is discoidal, very flat, and attached to twigs, and the female guards it until the young emerge.

Oxyopes bikakaeus new species
(Figs 190a–i, 191a–g)

Description:

Female (Fig. 190a–i): Total length 11.00 mm. Cephalothorax 3.50 mm long, 3.16 mm wide, 3.00 mm high. Abdomen 7.50 mm long, 4.32 mm wide, 4.16 mm high. Cephalothorax yellow-brown with patches of gray clavate hairs anterior to fovea, on back of PME and lateral sides of ocular area, posterior and lateral sides of thorax, V-shaped band in clypeus below AME. Ocular area black with white hairs inside. Fovea brown, rather long with slight pits on both ends and white clavate hairs in the apical half, posterior end of thorax steeply curved (nearly 90%). Eyes eight in four rows; eye lengths (mm) in decreasing order: PLE = 1.32, ALE = 0.76, PME = 0.66, AME = 0.38; eye diameters (mm): ALE = 0.24, PLE = 0.18, PME = 0.16, AME = 0.10. AME separation 1.8 times AME diameter. ALE separation 1.16 times ALE diameter. PLE separation 4.5 times ALE diameter. PME–PME separation a little over two PME diameters. Clypeus with a yellow marginal band and six long brown hairs between the arms of the V-shaped mark, height one third ALE diameter. Sternum longer than wide, yellow with long black erect hairs, margins yellowish, brown with extensions between coxae, apical end straight, posterior end tapers beyond coxa IV and has long hairs. Labium yellow with brownish midlateral margins, distal end nearly straight, more hirsute in the apical half, height about two thirds of maxillae, and longer (0.84 mm) than wide (0.48 mm). Maxillae longer than wide, narrow basal half yellow and broad apical half brown, hirsute, and with black serrulae. Chelicerae vertical, yellow with patches of gray hairs in the basal one third, orange-brown bosses well developed, promargin and retromargin with two and one teeth, respectively. Legs typical of the genus, femora without ventral longitudinal bands but mottled gray dorsally and laterally, similar to patellae, tibiae, and metatarsi, prolaterals of femur I with two long spines in the apical half, tibiae with numerous trichobothria in the basal one half, a pair of short apical ventral spines in tibiae II–IV but not I, tibia IV with five (1-2-2) ventral spines, metatarsi with one prominently long dorsal trichobothrium just above midhalf, tarsi with two or three prominently long dorsal trichobothria, three-clawed with 11–15 teeth in the superior claws and one tooth in the inferior claw, leg formula 1234. Pedipalp yellow except long brown spines

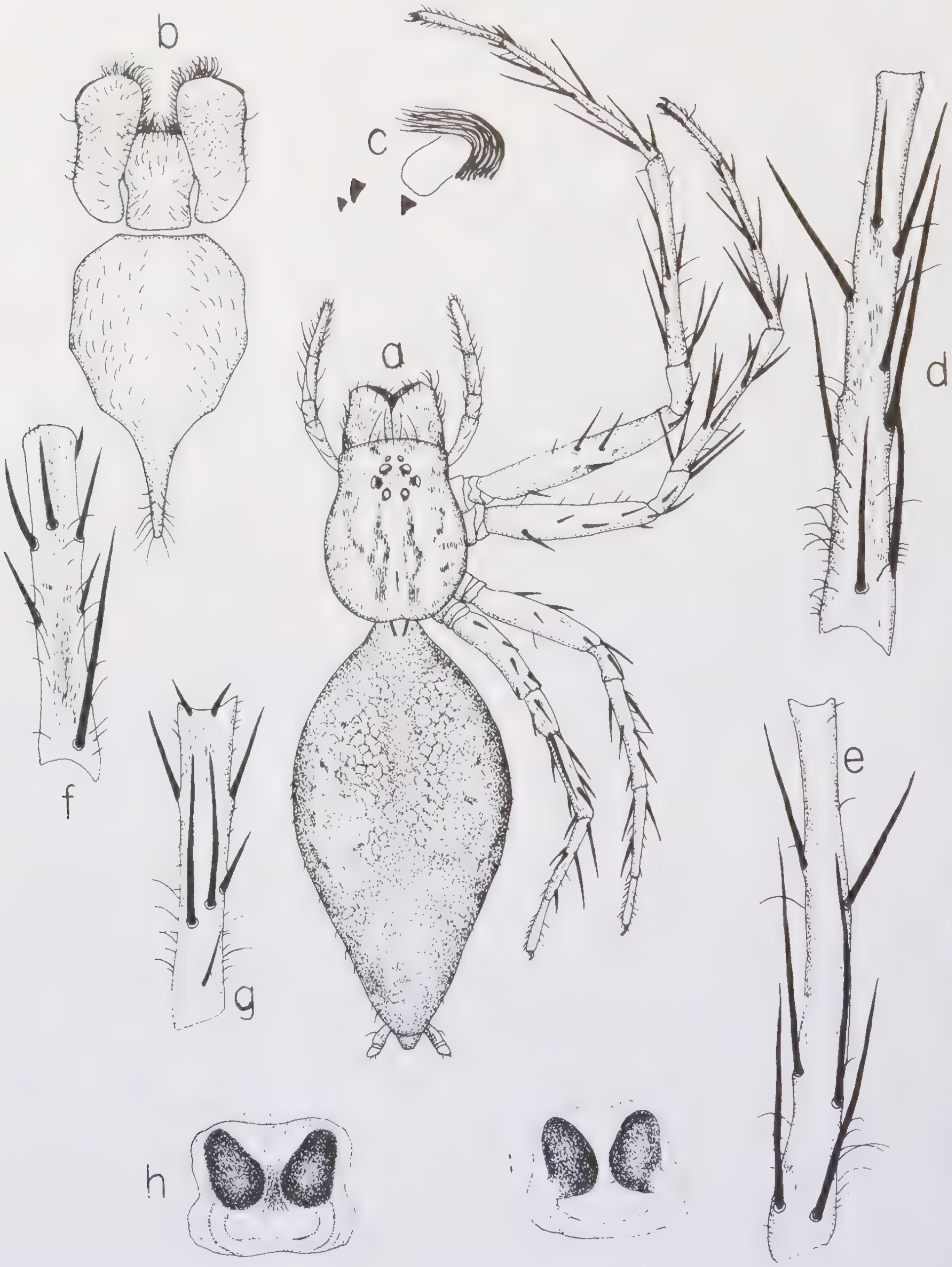


Fig. 190. Female *Oxyopes bikakaeus* n. sp. (a), sternum, labium, and maxillae (b); cheliceral teeth with one retromarginal (c); dorsal (d) and ventral (e) views of tibia I; dorsal (f) and ventral (g) views of tibia IV; and dorsal (h) and ventral (i) views of epigynum.

and yellow-brown tarsus, tibia with ca. ten trichobothria in the dorsobasal half, tarsus single-clawed with ten teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.24	1.28	4.00	3.36	1.44	14.32
2	3.64	1.28	3.68	3.08	1.36	13.04
3	3.28	1.20	2.68	2.72	1.00	10.88
4	3.20	1.12	2.52	2.88	0.94	10.66
Pedipalp	1.08	0.52	0.96	–	1.32	3.88

Abdomen bulges medially, tapering at both ends, chalk-white, with brown median longitudinal band including cardiac area, basal half with contiguous inverted V-shaped brown bands, middorsolaterals with a pair of brown longitudinal bands, laterals similar to dorsals in color, with posterior half dark brown and white anteriorly, venter with a black broad longitudinal band, white along its margins. Spinnerets dark brown, anterior pair parallel to each other and posterior pair diverging, with ovate terminal segment. Anal tubercle clothed with gray hairs laterally and white hairs dorsomedially. Epigynum with an elongate transverse orifice dorsad of the procurved ridge of posterior epigynal margin, median area clothed with a thick layer of gray hairs, midhalf of posterior epigynal margin slightly recurved, sperma-

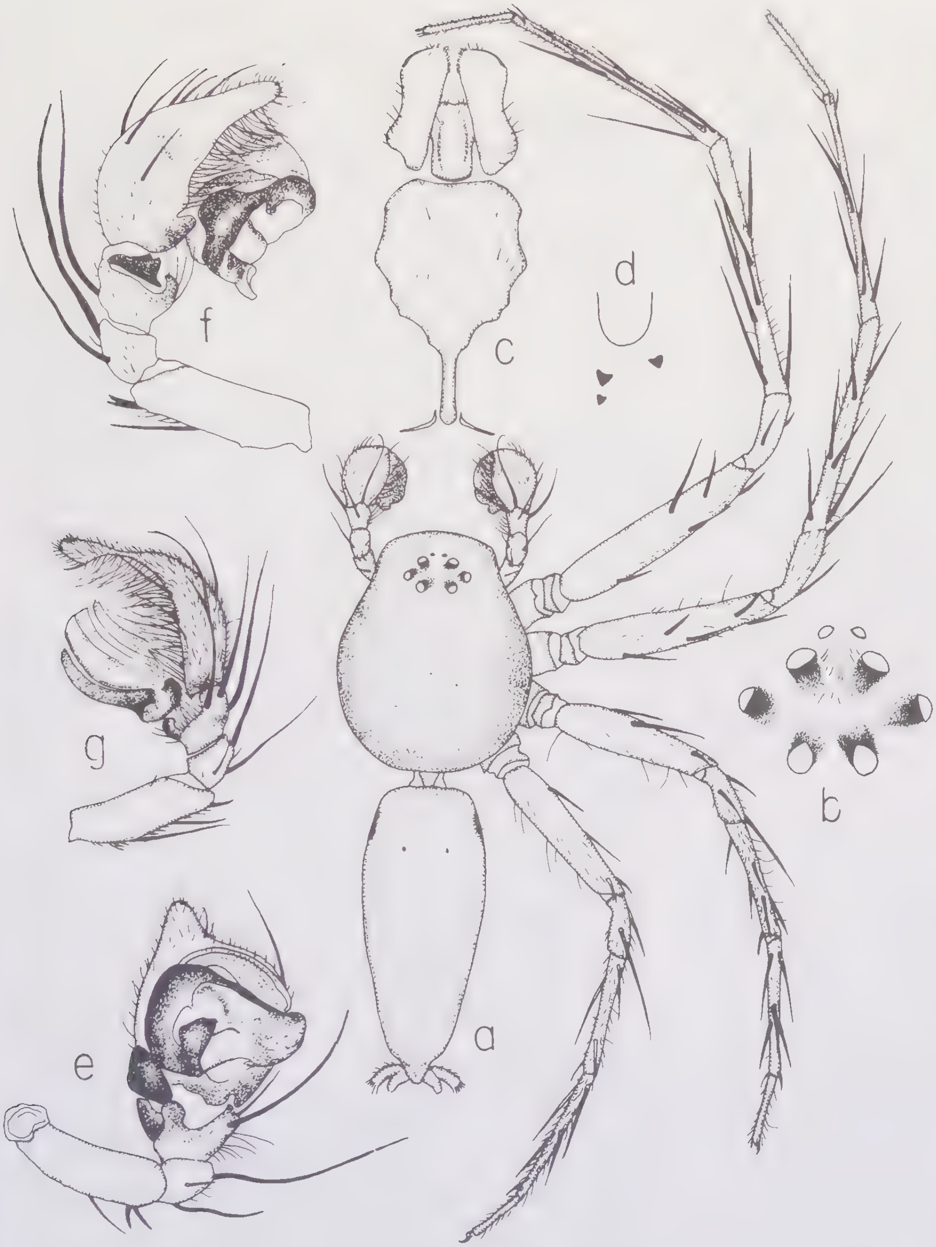


Fig. 191. Male *Oxyopes bikakaeus* n. sp. (a); eye pattern (b); sternum, labium, and maxillae (c); cheliceral teeth with two promarginals (d); and ventral (e) and lateral (fg) views of pedipalp.

thecae bean-shaped.

Male (Fig. 191a–g): Total length 7.76 mm. Cephalothorax 3.64 mm long, 3.08 mm wide, 1.90 mm high. Abdomen 4.12 mm long, 1.92 mm wide, 2.37 mm high. Cephalothorax yellowish brown, darker towards cephalic area and yellowish thoracic area, rounded to ovoid dorsally, ocular area black with thick white hairs in between eye rows except PME row, fovea short but prominent and with three brown spots on both ends, clypeus with a pale gray inverted V-shaped band radiating from AME and yellow between arms, posterior end of thorax with light orange clavate-like hairs. Eight eyes in four rows, eye lengths (mm) in decreasing order: PLE = 1.22, ALE = 0.66, PME = 0.60, AME = 0.30; eye diameters (mm): ALE = 0.19, PLE = 0.16, PME = 0.14, AME = 0.10. AME–AME separation AME diameter. ALE–ALE separation 1.5 times ALE diameter. PLE–PLE separation 7.6 times PLE diameter. PME–PME separation 2.3 times PME diameter. Clypeus height 6.4 times AME diameter. Sternum yellow, longer (1.76 mm) than wide (1.06 mm), anterior end rounded, including area opposite coxa I, lateral margins indented with a broad extension between coxae II and III, two indentions of different sizes opposite coxae III and IV, posterior end long and bat-like with a rounded tip and extended far beyond coxa IV. Labium longer (0.56 mm) than broad

(0.40 mm), yellow with margins of basal half brown and U-shaped, midlaterals slightly protruded laterally, distal end yellow with a shallow median cleft and with ca. five to seven hairs before and after the cleft. Maxillae yellowish brown with black serrulae, outer lateral margin concave medially, with basal end reduced and pointed towards base of labium and apical end broad or bulging, scopulae brown and located in the inner distal part after the serrulae. Chelicerae vertical with short fangs, prominent boss, dorsal bands absent, promargin with two teeth and retromargin with one tooth.

Legs long and spinous except tarsi, coxae grayish apically and trochanters grayish medially in ventral view, brown with grayish black tinges in dorsal view, venter of femora gray without longitudinal bands, tibiae with numerous trichobothria dorsally and with a pair of short apicoventral spines in legs II and III but absent in I and IV, tarsi three-clawed with two and 10–12 teeth in the inferior and superior claws, respectively. Leg formula 1234. Pedipalp yellowish brown with gray tinges except blackish brown tibia and cymbium, retrolateral tibial apophyses rounded apically and with a black triangular plate posteriorly (as viewed laterally), three long hairs directed lateral of the prolateral seta, cymbium somewhat rounded with a short distal end, black paracymbium, broad peg-like structure above the triangular plate of tibia.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.44	1.20	3.40	3.20	1.48	12.72
2	3.12	1.24	3.24	3.00	1.32	11.92
3	2.64	1.06	2.32	2.40	1.00	9.42
4	2.40	0.98	2.04	2.60	1.04	9.06

Abdomen orange-brown dorsally with a pair of brown spots in the apical one half, posterior end with a transverse groove above the anal tubercle, venter and lateral sides clothed with thick clavate hairs, ventrolateral area lined with long brown hairs. Ventral portion of pedicel with a pair of long brown hairs. Anterior spinnerets reddish brown, vertical, and partially diverging, posterior pair yellow with grayish black hairs, widely diverged (directed laterally) and terminal segment with ca. 20–24 spigots.

Etymology: The specific epithet was derived from the species character of having widely spread legs, translated in Tagalog as 'bikaka'.

Natural history: The male specimen was collected in August from a pitfall trap set in a newly cleared secondary dipterocarp forest. The female was found in June inside a rolled and galled leaf of a 1.3-m-high shrub.

Material examined: PHILIPPINES: *Luzon Is.*: Quezon Prov., Real, Llavac Vill., holotype male, 22 August 1984, A.T. Barrion; one paratype female, same locality data as holotype, 26 June 1984, A.T. Barrion.

Distribution: Philippines.

Oxyopes tiengianensis new species

(Fig. 192a–e)

Description:

Female: Total length 9.50 mm. Cephalothorax 3.40 mm long, 2.80 mm wide, 2.00 mm high. Abdomen 6.10 mm long, 1.65 mm wide, 1.50 mm high. Cephalothorax reddish brown with three white longitudinally broad bands and a brown fovea dorsally. CL/CW = 1.21. Clypeus with a black narrow longitudinal band running from each AME to chelicerae and an oblique black lateral band emanating from side of clypeus to cephalic border dorsad of coxa I. Dorsomedian band narrower than the subdorsal bands, runs from area between ALE to posterior of fovea. Subdorsal bands emanate from area between PLE–PME extending to posterior thoracic area. Eyes, arranged similarly to other *Oxyopes*, hexagonal. Eye diameter (mm): AME = 0.12, ALE = 0.28, PLE = PME = 0.20. Eye separation (mm): AME–AME = 0.18, AME–ALE = 0.11, ALE–ALE = ALE–PLE = 0.20, PLE–PLE = 1.08, PLE–PME = PME–PME = 0.30. Length of eye row (mm): AME = 0.41, ALE = 0.75, PLE = 1.28, PME = 0.68. Clypeus height very large, 2.6 times ALE or 5.2 times AME diameter. Sternum longer (1.55 mm) than wide (1.25 mm), yellow with short yellow-brown hairs and about 25 long brown hairs, anterior tip truncate and posterior end narrow and tapered between coxae IV. Labium reddish brown except slightly yellow apex. Maxillae longer than wide, apices almost rounded. Chelicerae yellow-brown with bands in front, fangs small, promargin with two teeth, and retromargin with a black tooth. Legs spinose, yellowish brown with black longitudinal ventral bands in femora I–IV, dorsum of patellae to metatarsi of all legs (fading before apex of metatarsus IV), venter and lateral sides of patellae I–IV with black tinge, lateral ends of tibiae I–IV and basolateral ends of metatarsi I–IV blackish, and basal one half of tibiae I–IV with trichobothria. Spination in femora I = 3-0-3-4, II = 3-0-2-3, III = 3-0-2-4, IV = 3-0-2-1; patellae I–IV = 2-0-0-0; tibiae I–IV = 2-4-1-1; metatarsi I = II = 0-7(2-2-3)-3-3. Tarsi three-clawed, each superior claw in leg I with at least 11 teeth. Apicodorsal seta of patella I 1.8 times longer than length of patella. Basal part of tibia I bears at least eight trichobothria dorsally. Metatarsi and tarsi with dorsal trichobothria. Leg formula 1243. Pedipalp yellow, total length shorter than femur II, femur with a pair of apicodorsal spines, patella and tibia with a dorsal longitudinal black band, tarsus with a short lateral band in basal one third and bearing a small claw at tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.10	1.40	5.55	5.05	2.15	19.25
2	4.65	1.35	5.00	4.75	1.80	17.55
3	3.55	1.10	3.50	3.65	1.40	13.20
4	5.00	1.25	4.25	5.20	1.10	16.80
Pedipalp	1.35	0.55	0.95	-	1.56	4.40

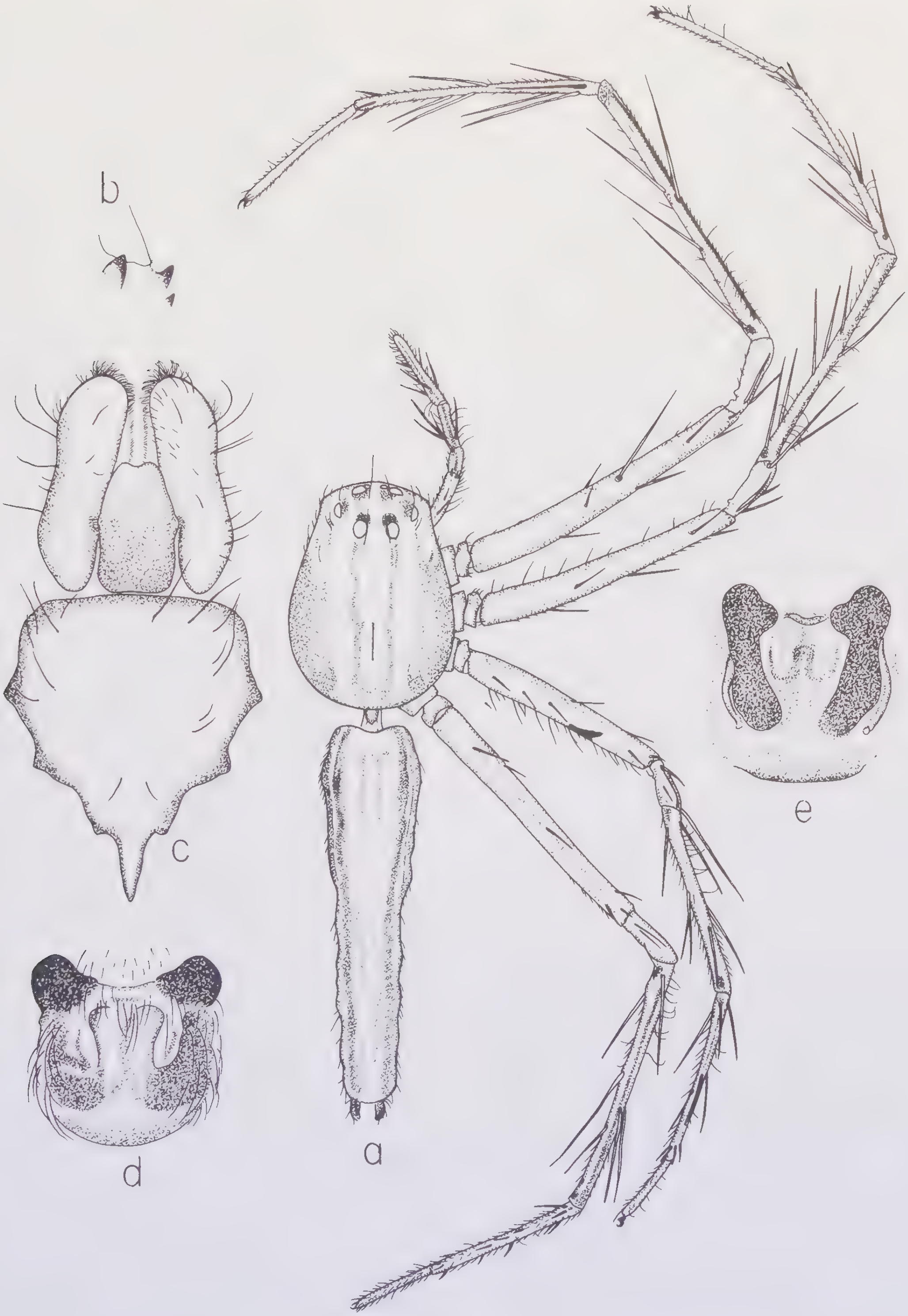


Fig. 192. Male *Oxyopes tiengianensis* n. sp. (a); cheliceral teeth with one retromarginal (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Abdomen longer than wide, AbL/AbW = 3.69. Dorsum of abdomen orange, bears three white longitudinal bands bordered laterally with two brown bands separated by a thin white longitudinal band in between. Anterior end of abdomen 1.6 times wider than its posterior end. Venter black medially except white lateral borders and yellow book lungs. Epigynum with a moderately broad and medially constricted septum, from the anterior epigynal margin, apex of septum slightly cleft, and concave posterior epigynal margin close to the epigastric furrow. Laterals of septum with thin ovoid orifices. Apices of spermathecae inwardly curved. Spermathecal sacs apically globular, apices on top of anterior tip of spermathecae ventrally. Spinnerets gray-brown, anterior pair with a moderately long basal segment, twice longer than broad.

Etymology: Named after the type locality.

Natural history: Bagged in a plastic bag by a Vietnamese farmer weeding his ricefield, which was severely damaged by rice leaffolder, *Cnaphalocrocis medinalis* (Guenee). A female leaffolder moth was its prey, held between chelicerae and maxillae when caught.

Material examined: VIETNAM: South Vietnam: Tiengian Prov., Long Dinh Vill., holotype female, 14 August 1990, Mr D. Binh.

Distribution: Vietnam.

Oxyopes javanus Thorell
(Figs 193a–c, 194a–s)

Oxyopes javanus Thorell, 1877. Ann. Mus. Civ. St. Nat. Genova 25: 329.

O. lineatipes Simon, 1885. Bull. Soc. Zool. France 10: 441.

Description:

Female (Fig. 193a–c): Total length 9.20 mm. Carapace 3.32 mm long, 2.80 mm wide, 2.50 mm high. Abdomen 5.88 mm long, 2.27 mm wide, 2.83 mm high. Cephalothorax brown with grayish laterobasal margins, two almost diverging longitudinal, black to gray bands below AME, running downward to chelicerae, L-shaped gray band in the outer margins of clypeus above boss, broad yellow V-shaped mark above the long, longitudinal brown fovea, black eye surrounds, and densely covered with brown hairs. Eight eyes in four rows, rows 2–4 (ALE to PLE) arranged hexagonally, eye length (mm) in decreasing order: PLE = 1.16, ALE = 0.64, PME = 0.58, AME = 0.34; eye diameter (mm): ALE = 0.24, PLE = 0.18, PME = 0.15, AME = 0.10. AME separation one half ALE diameter. ALE separation twice AME diameter. PME separation nearly twice eye diameter. PLE separation 5.44 times eye diameter. Clypeus height five times diameter. Sternum yellow-brown with gray tinges, erect brown hairs with those at apical half longer than basal, lateral margins indented with outgrowths or extensions in between opposite coxae, posterior end tapers, extending beyond coxae IV, and apical end straight. Labium yellowish brown, longer (0.52 mm) than wide (0.36 mm), with lateral midmargin indented, apical tip slightly indented at midpoint, and posterior end strongly rounded, height of labium 0.62 mm of maxilla length. Maxilla yellow, slender, and three times longer than broad, outer lateral margins with five or six long erect setae, serrula prominent and diagonal towards scopula. Chelicera same color as carapace, banded gray dorsally (frontally), vertical, moderately robust, with two promarginal and one retromarginal teeth, fang short and relatively small, boss distinct. Legs brown, long, and slender, with long spines in all the segments except tarsi and black longitudinal band in the femora, tarsi three-clawed with one or two and 10–11 teeth in the inferior and superior claw, respectively. Leg formula 1243. Pedipalp yellow-brown with long spines, tarsus single-clawed with seven teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.72	0.88	2.92	2.56	1.12	10.20
2	2.64	0.96	2.48	2.72	0.96	9.76
3	2.28	0.80	1.76	2.20	0.76	7.80
4	2.76	0.92	2.04	2.88	0.84	9.44
Pedipalp	0.84	0.42	0.64	–	1.00	2.90

Male (Fig. 194a–s): Total length 7.36 mm. Carapace 3.52 mm long, 2.60 mm wide, 2.24 mm high. Abdomen 3.84 mm long, 1.20 mm wide, 1.14 mm high. Cephalothorax yellowish brown with black eye surrounds, narrow cephalic, and rounded thorax, fovea longitudinally deep. Eyes as in female except for diameters (mm): ALE = 0.21, PLE = 0.20, PME = 0.18, AME = 0.10; and lengths (mm): PLE = 1.24, ALE = 0.68, PME = 0.64, AME = 0.38. AME separation nearly twice eye diameter. ALE separation 1.24 times eye diameter. PLE separation five times eye diameter. PME separation 1.55 times eye diameter. Clypeus height six times AME diameter. Sternum, labium, and maxillae as in the female except for a more pointed posterior tip of sternum, cleft anteromedian labium, and slender and slightly converging maxillae, with rather long brown hairs laterally directed sidewards. Chelicerae yellow with gray longitudinal band, left chelicera with two and one and right chelicera with one and one promarginal and retromarginal teeth, respectively. Fang short with robust base. Legs long and spinous as in the female, venter of femora I–IV with a pair of parallel longitudinal gray bands, ventral spines of tibia IV nearly opposite each other, tarsus three-clawed with eight or nine and one teeth in the superior and inferior claws, respectively. Leg formula 1243. Palp yellow-brown except dark brown to black cymbium and tibial apophysis. Retrolateral tibia apophysis (RTA) rather long and tapering to a blunt end. PTA varies considerably in length and color and moderately in shape. Fig. 194e–s show the range in variation. Ventral apohysis broadly blunt and short, with upper end bifurcated in dorsal view. Tibia with three long brown setae reaching midhalf of cymbium.

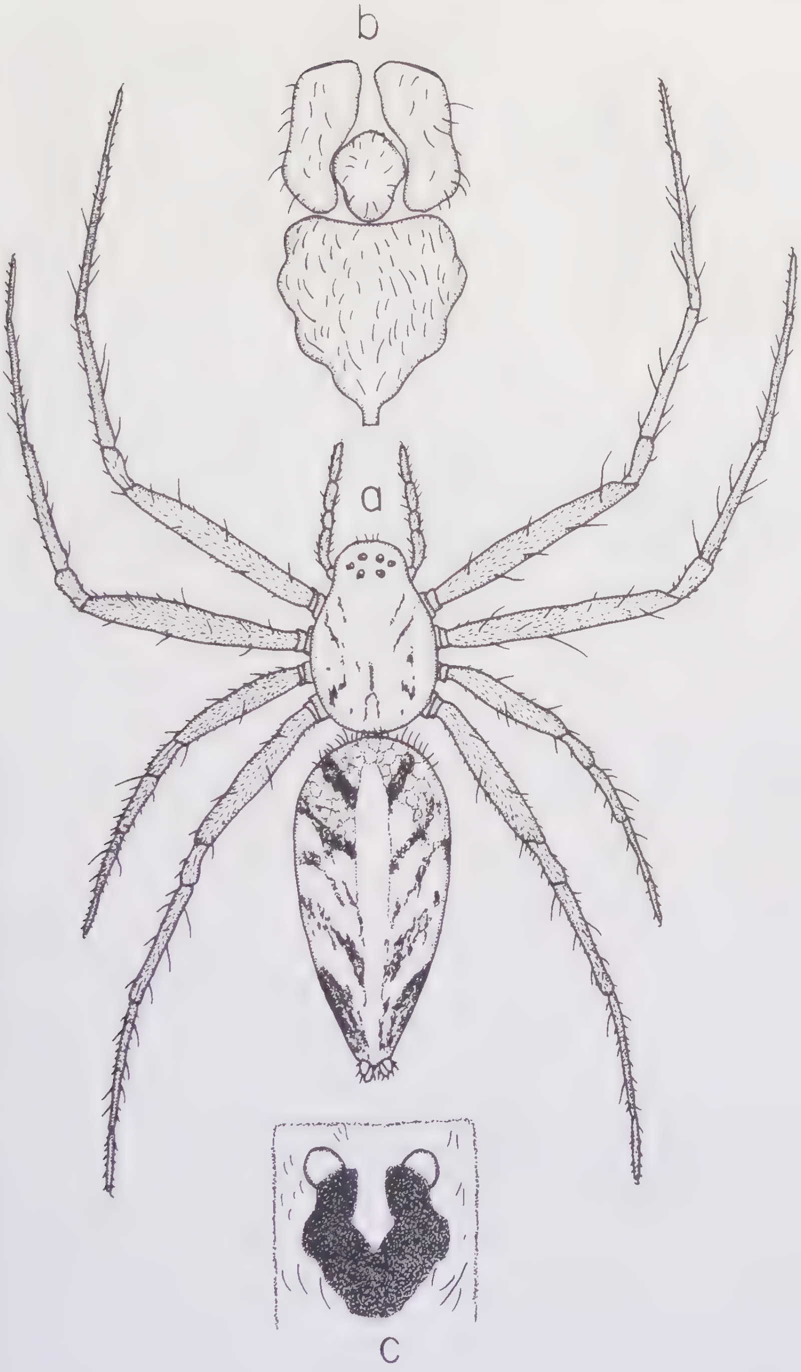


Fig. 193. Female *Oxyopes javanus* Thorell (a); sternum, labium, and maxillae (b); and epigynum (c).

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.92	1.18	4.24	4.40	1.92	15.66
2	3.60	1.04	3.56	4.12	1.56	13.88
3	3.20	1.04	2.88	3.00	1.12	11.24
4	3.88	1.12	3.20	4.24	1.32	13.76

Abdomen brownish yellow and shaped as in the female, tapering posteriorly with three or four diagonal gray bands dorsolaterally. Spinnerets yellow-brown with a few gray marks, posterior pairs as long as the anterior.

Variation: Females' range of body length 7–9.58 (7.98 ± 0.98) mm, males 6.25–7.36 (6.74 ± 0.40) mm. Abdominal dorsum white with yellow-brown band medially in females and yellow-brown in males. Femoral venter with one or two longitudinal bands in both sexes. Retrolateral tibial apophysis (RTA) shows considerable variation in length and color and only moderately in shape. Old males usually have cut apical one third or the lightly colored part of RTA (Fig. 194e–s).

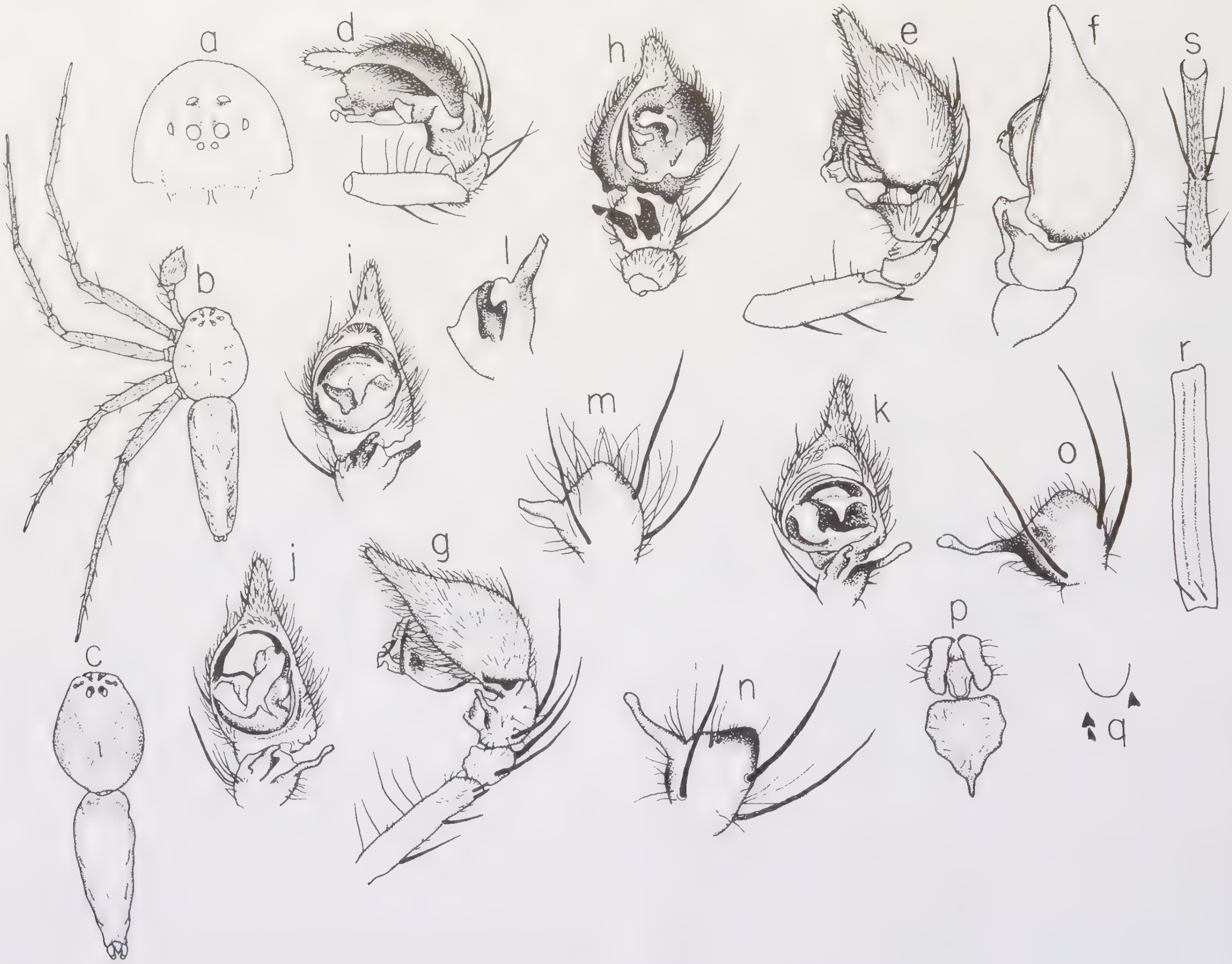


Fig. 194. Male *Oxyopes javanus* Thorell, frontal view (a); habitus with (b) and without (c) legs; pedipalp's lateral view (d) and its variations (e–g), and ventral view (h) and its variations (i–k); tibial apophysis (l–o); sternum, labium, and maxillae (p); cheliceral teeth (q); and venter of femur IV (r) and tibia IV (s).

Natural history: Adults of *O. javanus* are common in rice and rice-based crops and grasslands in summer months (March–May) and immatures in September–February. They are effective hunters or predators of a wide array of insect pests, build no webs, but the females guard their cocoons until spiderlings get out of cocoon.

Material examined: PHILIPPINES: *Luzon Is.*: Cagayan Prov., Solana, Iraga Vill., six females, three males, 18 immatures, 20 September 1983, B. Canapi; Bangag Vill., 11 females, two males, seven immatures, 23 September 1981, M. Perez and A.T. Barrion; Abra Prov., Bangued, one female, 24 September 1981; Salapadan Vill., five females, ten immatures, 23 September 1989, A.T. Barrion and M. Perez; Nueva Viscaya Prov., Bongabong, 49 female, 12 males, 107 immatures, 16 August–10 September 1989, Farmer's Cooperative Organization; Isabela Prov., Santiago, five females, six immatures, 12 April 1981, R. Apostol; Alicia, four females, 23 September 1981, A.T. Barrion; Ifugao Prov., Banaue, eight females, five males, 12 immatures, 23 March 1979; Mt. Province, Bontoc, four females, seven males, one immature, 25 October 1979; Pangasinan Prov., Manaoag, Lipit Vill., three females, three males, six subadults, 29 January 1979, J. Bandong, Pao Vill., 12 females, seven males, two immatures, 13 October 1982, A.T. Barrion; Nueva Ecija, Pantabangan

Vill., three females, one male, eight immatures, 31 January 1979, A.T. Barrion; Sto. Domingo Vill., 68 females, 18 males, 46 immatures, 23 October 1979, M. Perez; Laguna Prov., Los Baños, IRRI Experimental Farm, 16 females, three males, 36 immatures, 14 February 1980, A.T. Barrion; Bay, Mainit Vill., 18 females, five immatures, 18 March 1981, R. Roxas; five females, four immatures, 18 December 1988, Victoria, Masapang Vill., 23 females, 15 males, 104 immatures, January–February 1981, G. Aquino, Siniloan, Magsaysay Vill., one female, one male, 16 immatures, 6 May 1984, R. Apostol; three females, two males, nine spiderlings, 4 July 1984, A.T. Barrion; Quezon Prov., Real, Llavac Vill., one female, two males, 12 immatures, 6 January 1985, A.T. Barrion; Batangas Prov., Tanauan, Cale Vill., 45 females, 24 males, 111 immatures, July–August 1977, R. Apostol and A.T. Barrion; Banaderos Vill., 21 females, seven males, six subadults, 17 November 1979, R. Apostol and C. de Castro; Lipa, Marauoy Vill., five females, two males, 14 November 1980, A.T. Barrion; Albay Prov., Cagsawa Vill., 18 females, eight males, 21 immatures, 31 August 1988, M. Perez and B. Garcia; *Palawan Is.*: Palawan Prov., Narra, Estrella Vill., eight females, one male, 29 September 1987, A.T. Barrion; Brookes Pt., Calasagan Vill., two males, 26 July 1985, A.T. Barrion; *Panay Is.*: Iloilo Prov., Oton, Rizal Vill., 17 females, ten males, 24 September 1981, A.T. Barrion; Tigbauan, 21 females, six males, 18 immatures, January–February 1978, M. Lumaban; *Leyte Is.*: Leyte Prov., Baybay, Visayas State College of Agriculture, six females, two males, 15 July 1985, A.T. Barrion; Albuera, one female, four immatures, 16 July 1985, A.T. Barrion; *Mindanao Is.*: Zamboanga del Sur Prov., Pagadian, two females, 15 August 1979, A.T. Barrion and C. de Castro; Molave, Sala Vill., 26 females, eight males, 17 immatures, 10 August 1979, A.T. Barrion; South Cotabato Prov., Koronadal, Morales Village, six females, 3 March 1983, A. Alviola, Esperanza Vill., 16 females, seven males, 62 immatures, 19 June 1985, A.T. Barrion; Misamis Oriental Prov., Claveria, Anei Vill., 24 females, four males, ten immatures, 16 September 1987, A.T. Barrion and E. Libetario; Kalingagan Vill., five females, two males, 17 September 1987, E. Dahilog; Agusan del Sur Prov., Del Monte, Talacogon, 12 females, three males, 18 immatures, 12 July 1979, A.T. Barrion. **VIETNAM:** Hanoi, Plant Protection Research Institute Vill., two females, six immatures, 7 August 1990, A.T. Barrion. **THAILAND:** Pranchiburi Prov., Prachinburi Rice Research Station, 12 females, four males, ten immatures, 26 July 1989, A.T. Barrion. **INDONESIA:** Central Java Prov., Magelang, Blabak, three females, 24 August 1989, A.T. Barrion, Soko Vill., 16 females, five males, six immatures, 24 August 1989, A.T. Barrion. **BANGLADESH:** Dacca, Joydevpur, Bangladesh Rice Research Institute, 18 females, ten males, 72 immatures, 29 October 1984, N.Q. Kamal.

Distribution: India, Bangladesh, Myanmar, Thailand, Vietnam, Cambodia, China, Philippines, Malaysia, Singapore, and Indonesia.

Oxyopes matiensis new species
(Figs 195a–h, 196a–g)

Description:

Female (Fig. 195a–h): Total length 7.20 mm. Carapace 2.64 mm long, 2.80 mm wide, 2.20 mm high. Abdomen 4.56 mm long, 1.64 mm wide, 1.52 mm high. Cephalothorax yellow with brown dorsomedian and dorsolateral longitudinal bands of small leaf-like hairs, dorsolateral band extended to sides of clypeus above boss, ocular area black with white hair in between eyes and slightly higher than thorax, V-shaped gray band radiates from AME to clypeus, fovea brown and moderately long. Eight eyes in four rows, length (mm) in decreasing order: PLE = 1, ALE = 0.60, PME = 0.53, AME = 0.32; diameter (mm): ALE = 0.22, PLE = 0.22, PLE = PME = 0.15, AME = 0.08. AME separation two eye diameters. ALE separation 0.72 eye diameter. PLE separation 5.73 times diameter. PME separation 1.53 eye diameter. Clypeus height 7.25 times AME diameter. Sternum yellow with black erect hairs near margins, shaped as in male. Labium broad medially, narrow at both ends, and clothed with erect hairs. Maxilla as in male except for nearly straight lateral margins, serrula and scopulae black. Chelicera vertical with two and one teeth in promargin and retromargin, respectively. Legs as in male, including band patterns, except in venter of femora IV with only a very short band near distal end. All tibiae without ventral apical spines, tarsi three-clawed with zero or one and 7–11 teeth in the inferior and superior claws, respectively. Leg formula 1243. Pedipalp as long as metatarsus IV, single-clawed with six teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.68	1.04	4.08	3.96	1.40	14.16
2	3.40	1.00	3.64	3.68	1.20	12.92
3	2.80	0.84	2.68	3.00	0.94	10.26
4	3.14	0.92	3.08	3.84	1.08	12.06
Pedipalp	1.00	0.44	0.84	–	1.20	3.48

Abdomen typical of *Oxyopes*, orange-brown dorsally with chalk-white longitudinal bands at the margins of the median longitudinal band, dorsolaterals with a pair of parallel grayish black bands, ventrolaterals white, venter with a broad longitudinal brown to gray band. Spinnerets yellow with black hairs, anterior pair more robust than the posterior pair. Epigynum with a broad posterior plate, narrow midpiece, incomplete anterior epigynal margins, and widely separated or diverging spermathecae.

Male (Fig. 196a–g): Total length 6.96 mm. Carapace 2.60 mm long, 2.32 mm wide, 1.80 mm high. Abdomen 4.35 mm long, 1.16 mm wide, 1.56 mm high. Cephalothorax yellowish brown with orange tinges behind the fovea and subdorsal area of carapace, ocular area reddish brown, posterior lateral eyes with a pair of long hairs behind each eye, clypeus with a pair of gray longitudinal bands running from AME to entire chelicera and another short band above each boss extended

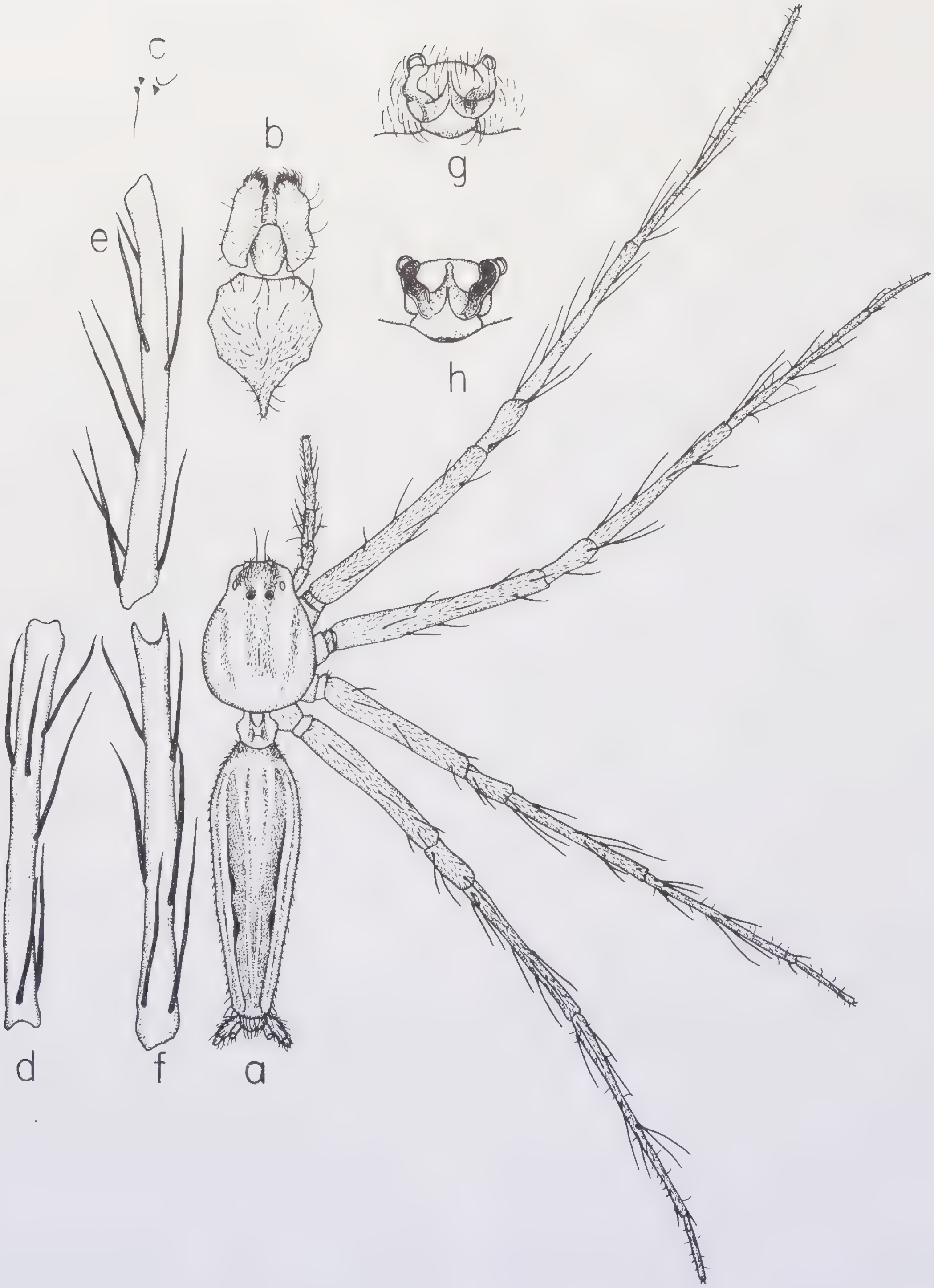


Fig. 195. Female *Oxyopes matiensis* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth with one retromarginal tooth (c); dorsal (d), lateral (e), and ventral (f) views of tibia I; and dorsal (g) and ventral (h) views of epigynum.

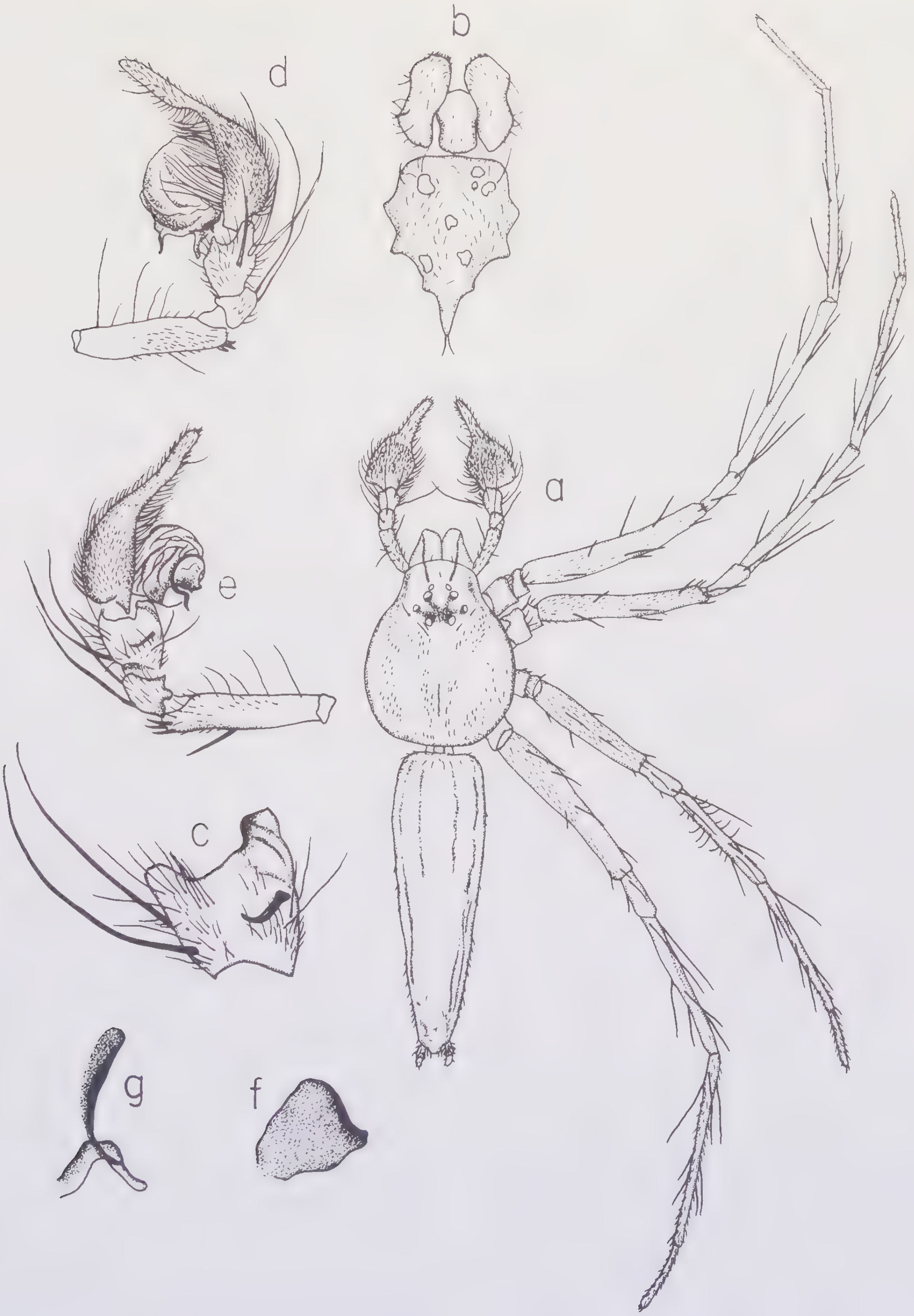


Fig. 196. Male *Oxyopes matiensis* n. sp. (a); sternum, labium, and maxillae (b); pedipalp's tibia (c); lateral views of entire pedipalp (de); tegular swelling (f); and tip of embolus and conductor (g).

towards the long brown fovea. Fovea in a deep ovoid-shaped groove. Eight eyes in four rows; length (mm) in decreasing order: PLE = 0.95, ALE = 0.54, PME = 0.42, AME = 0.32, diameter (mm): ALE = 0.19, PLE = 0.14, PME = 0.14, PME = 0.11, AME = 0.08. Separation: AME–AME two eye diameters, ALE–ALE AME separation or two AME diameters, PLE–PLE 5.43 eye diameter, and PME–PME a little less than two eye diameters. Clypeus height 7.5 times AME diameter. Sternum yellowish brown with yellow spots, 18 long erect hairs in two transverse rows prominent in the apical half, apical margin straight and rounded apicolaterally opposite coxa I, lateral margins with deeper and wider indentions and prominent spur-like growths in between, posterior end tapers and extends between coxae IV. Labium longer than wide, yellow except brownish U-shaped base, distal end rounded. Maxilla yellow, slender with slight indentions along midlength of outer lateral margins, inner margins straight with yellowish gray scopulae and gray to black towards apex. Serrula black behind black scopulae. Chelicera vertical with a short fang, promargin with two teeth (one large and the other very minute) and one tooth in the retromargin. Legs long and spinous as in other *Oxyopes*, femora with a pair of prominent and longitudinal pale gray to black bands ventrally, patellae I–II with a dorsal longitudinal band, tibiae I–III with a prolateral black spot near base and a dorsal longitudinal gray to black band, tibia IV banded only basal half, similar to metatarsi I–IV and with black spots prolaterally and retrolaterally, ventral in tibia IV both arranged diagonally and parallel to each other, tarsi three-clawed with four to eight and one teeth in the superior and inferior claws, respectively. Leg formula 1243.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.56	0.92	4.08	4.36	1.80	14.72
2	3.36	0.92	3.60	3.92	1.40	13.20
3	2.92	0.88	2.72	3.04	1.00	10.56
4	3.36	0.92	3.20	4.00	1.24	12.72

Palp yellowish brown except dark brown basal half of cymbium and yellow apical one half, femur with four ventral erect thin long hairs and five dorsal setae arranged in two groups (three clumped at distal end two in basal two thirds), tibia attached to the ventral one half of patella, retrolateral tibial apophysis (RTA) truncated and grooved medially with a black transverse J-like band curved inwardly almost from base of RTA, basal one third of tibia with a diagonal row of ca. 13 thin hairs, dorsolateral midhalf with a cluster of hairs, two long dorsal setae, similar to patella, and one prolateral seta, cymbium with four dorsolateral and two ventral setae, embolus short, and median apophysis with a blunt tip. Abdomen typical of *Oxyopes* wide anteriorly and tapering posteriorly, dorsomedian with orange tinge and bordered with two white longitudinal bands laterally, lateral with a longitudinal band bordered with grayish lines dorsally and ventrally, venter of abdomen without bands and pit-like marks but grayish to black towards spinnerets. Anterior spinnerets more robust and cylindrical than the slightly longer posterior spinnerets.

Etymology: Named after the type locality.

Natural history: The male was collected by D-Vac suction machine from grassland dominated by *Imperata cylindrica* and the female from the floor of a Malaise trap set in hilly grassland in September.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Mat-ì, Manibay Vill., holotype male, 17 September 1987, A.T. Barrion; paratype female, Claveria, Hinaplanan Vill., 23 September 1987, A.T. Barrion.

Distribution: Philippines.

Oxyopes aspirasi new species

(Fig. 197a–h)

Description:

Male: Total length 7.45 mm. Cephalothorax 3.35 mm long, 2.85 mm wide, 1.80 mm high. Abdomen 4.10 mm long, 1.80 mm wide, 1.60 mm high. Cephalothorax orange-yellow with a pair of thin longitudinal grayish black bands parallel to each other all the way from foveal area to ME, subdorsal bands moderately broad, extending from thoracic area to sides of clypeus. Eyes with dominant black markings with two pairs of setae in the eye area, one more pair posterior to PLE and a single seta anterior to AME. Eye diameter (mm): ALE = 0.23, PME = 0.21, PLE = 0.20, AME = 0.10. Eye separation (mm): AME–AME = 0.18, 1.8 times AME diameter; AME–ALE = 0.08, ALE–ALE = 0.26, ALE–PME = 0.23, PME–PME = 1.13, PME–PLE = 0.31, PLE–PLE = 0.20. Clypeus height large, six times AME diameter. Sternum yellow with at least 32 black submarginal setae in the entire area, lateral areas opposite two coxae with a gray to black spot, a short band present between coxae IV opposite the pointed posterior end, longer (1.3 mm) than wide (1.10 mm). Labium reddish brown except yellowish apex, with a median notch, longer (0.50 mm) than wide (0.30 mm). Maxillae yellow, almost three times longer than wide. Chelicerae yellow-brown with gray dorsal stripes parallel to each other, retromargin with one tooth higher than the apical large tooth and small basal tooth of promargin. Legs brown with yellow tinge, venter of femora and dorsum of tibiae with longitudinal black band, posterior end of each tibia with a prolateral and a retrolateral gray to black spot, long and spinous, and tibial dorsum with two rows of trichobothria. Basal spines of femora III and IV long, reaching or slightly beyond base of middorsal spines. Metatarsus I/tarsus I = 2.23; metatarsus I longer than tibia I. Leg formula 1243. Pedipalp as long as femur I, venter of femur with at least six long brown hairs, tibia with a short anterior and a long posterior dorsal spines and two long prolateral spines, deep cavity behind the bases of prolateral setae, RTA reduced, ITA distinctly black, sclerotized short plate truncated at apex and with a tooth-like process near it ventrally; embolus short and slightly coiled, borne on the apex of tegulum; conductor

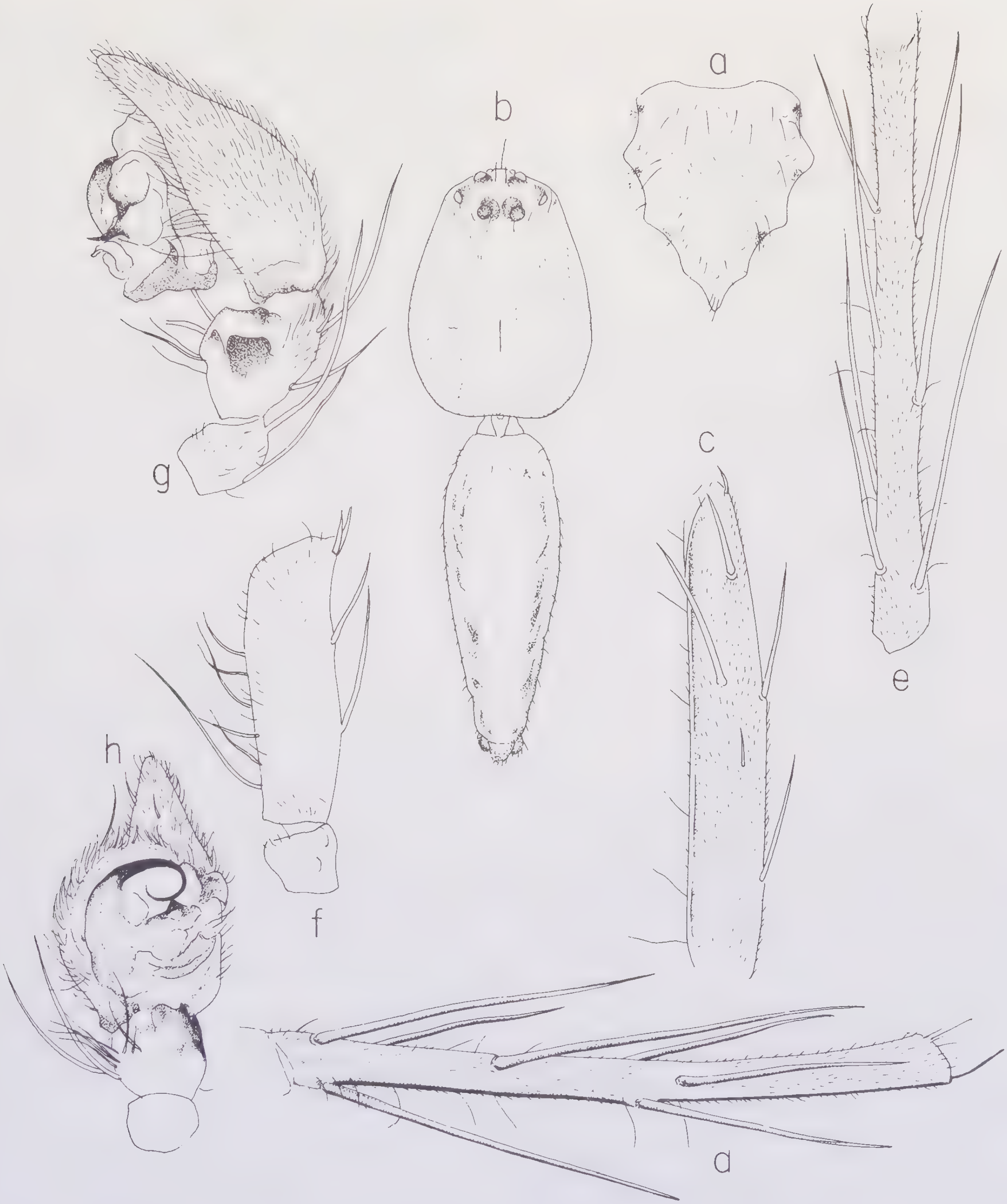


Fig. 197. Male *Oxyopes aspirasi* n. sp., sternum (a); habitus without legs and palps (b); femur I (c); lateral (d) and ventral (e) views of tibia I; femur of pedipalp (f); and lateral (g) and ventral (h) views of pedipalp.

tube-like, cylindrical, apex concave in lateral view and hooked with a broad base in ventral view; cymbium with four or five spines, longer than wide (ratio 1.88), apical part moderately short and spineless.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.60	1.20	3.85	4.25	1.90	14.80
2	3.40	1.15	3.45	3.90	1.45	13.35
3	3.00	0.85	2.60	3.20	1.10	10.75
4	3.47	1.10	2.90	4.00	1.30	12.77
Pedipalp	1.20	0.40	0.50	–	1.55	3.65

Abdomen orange-yellow except each lateral with three to five long comma-like yellow stripes bordered black to gray in between, stripes becoming short posteriorly, venter yellow with two longitudinal gray-brown bands and a grayish black band anterior to the epigastric furrow. Spinnerets typical of *Oxyopes*.

Etymology: Named after the chancellor of UP Los Baños, Dr Ruben Aspiras.

Natural history: The two males were sweep-net-collected from rainfed lowland rice in September.

Material examined: PHILIPPINES: *Palawan Is.*: Palawan Prov., Aborlan, holotype male, 26 September 1987, A.T. Barrion, paratype male, same data as holotype.

Distribution: Philippines.

Oxyopes pingasus new species

(Fig. 198a–f)

Description:

Male: Total length 8.35 mm. Cephalothorax 3.35 mm long, 2.80 mm wide, 2.20 mm high. Abdomen 5.00 mm long, 1.70 mm wide, 1.90 mm high. Cephalothorax yellow with remnants of the parallel longitudinal median band made up of leaf-like creeping hairs, the bands sandwich the long brown fovea, subdorsal band on each side of the median bands present, dorsally the cephalic is narrower than the broader and more convex thoracic area. Eight eyes with black margins and white band between AME and ALE and between ALE and PME. ALE to PLE in hexagonal arrangement. Eye diameter (mm): ALE = 0.23, PLE = 0.20, PME = 0.18, AME = 0.13. Eye separation (mm): AME–AME = 0.18, AME–ALE = 0.08, ALE–ALE = 0.23, ALE–PME = 0.20, PME–PME = 1.0, PME–PLE = 0.25, PLE–PLE = 0.28. Clypeus height large, 4.42 times AME or 2.30 times ALE diameter, with two black longitudinal bands, each running to vertical chelicera. Sternum yellow with about 18 long brown setae, ten located subapically, almost as long as wide, lateral margins serrate due to cavities, and posterior end pointed. Labium yellow, longer than wide. Maxillae longer than wide, yellow, and with a median groove, outer lateral edge with four to six long brown setae, apex with scopulae slightly converging. Chelicerae with short fang, ventral base with five long hairs, and dorsal base with many hairs lining the promargin. Retromargin with a single tooth similar to promargin. Legs typical of *Oxyopes*, long, slender, spinous, with longitudinal ventrolateral bands in femora I–IV, dorsum of tibiae I–IV, and sometimes metatarsi I–IV, prolateral and retrolateral spots present at base of tibiae I–IV. Femur I with three dorsal and two or three strong prolateral spines, mostly on apical one half, three prolateral spines in right leg of decreasing length towards apex. Leg spination typical of *Oxyopes*. Leg formula 143 (leg II both missing). Metatarsus I : tarsus I = 2.90, metatarsus I shorter than tibia I. Pedipalp slightly shorter than femur IV; femur with four (1-1-2) dorsal spines and venter with four long hairs. VTA and RTA developed, with a deep C-cavity in between; RTA broad and thinly sclerotized, narrowed apically, producing a rounded tip with a small notch; VTA bent and twisted, thumb-like, directed towards the inside; tip of conductor transverse, J-shaped, and brownish; cymbium with a small conical prominence retrolaterally at base, apical one third narrowed; ratio of length and width = 2.06; tegulum with small notch basad of conductor.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.20	1.15	4.60	4.35	1.50	15.80
2	–	–	–	–	–	–
3	3.40	1.00	3.00	3.50	1.20	12.10
4	3.90	1.10	3.40	4.60	1.35	14.35
Pedipalp	1.20	0.40	0.60	–	1.65	3.85

Abdomen yellowish orange with brown club-like or leaf-like hairs covering dorsum in the form of two median longitudinal bands fused near cardiac area, laterals with four or five oblique black bands, tapers posteriorly and broad anteriorly; median venter with median longitudinal broad band, yellow inside with brown mottles. Anterior spinnerets parallel to each other and more robust than divergent posterior pair.

Etymology: Named after the notched RTA, which is 'pingas' in Tagalog.

Natural history: The holotype male was collected by D-Vac suction machine from an irrigated 45 DT once in July.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype male, 6 July 1979, J. Perfect and A. Cook.

Distribution: Philippines.

Oxyopes lineatipes (C.L. Koch)

(Fig. 199a–f)

Sphasus lineatipes C.L. Koch, 1848. Die. Arachn. 15: 55.

Oxyopes lineatipes Simon, 1864. Hist. Nat. Araign. (1st ed.): 387.

Redescription:

Male: Total length 6.70 mm. Cephalothorax 3.20 mm long, 2.45 mm wide, 1.70 mm high. Abdomen 3.50 mm long, 1.35 mm wide, 1.50 mm high. Cephalothorax

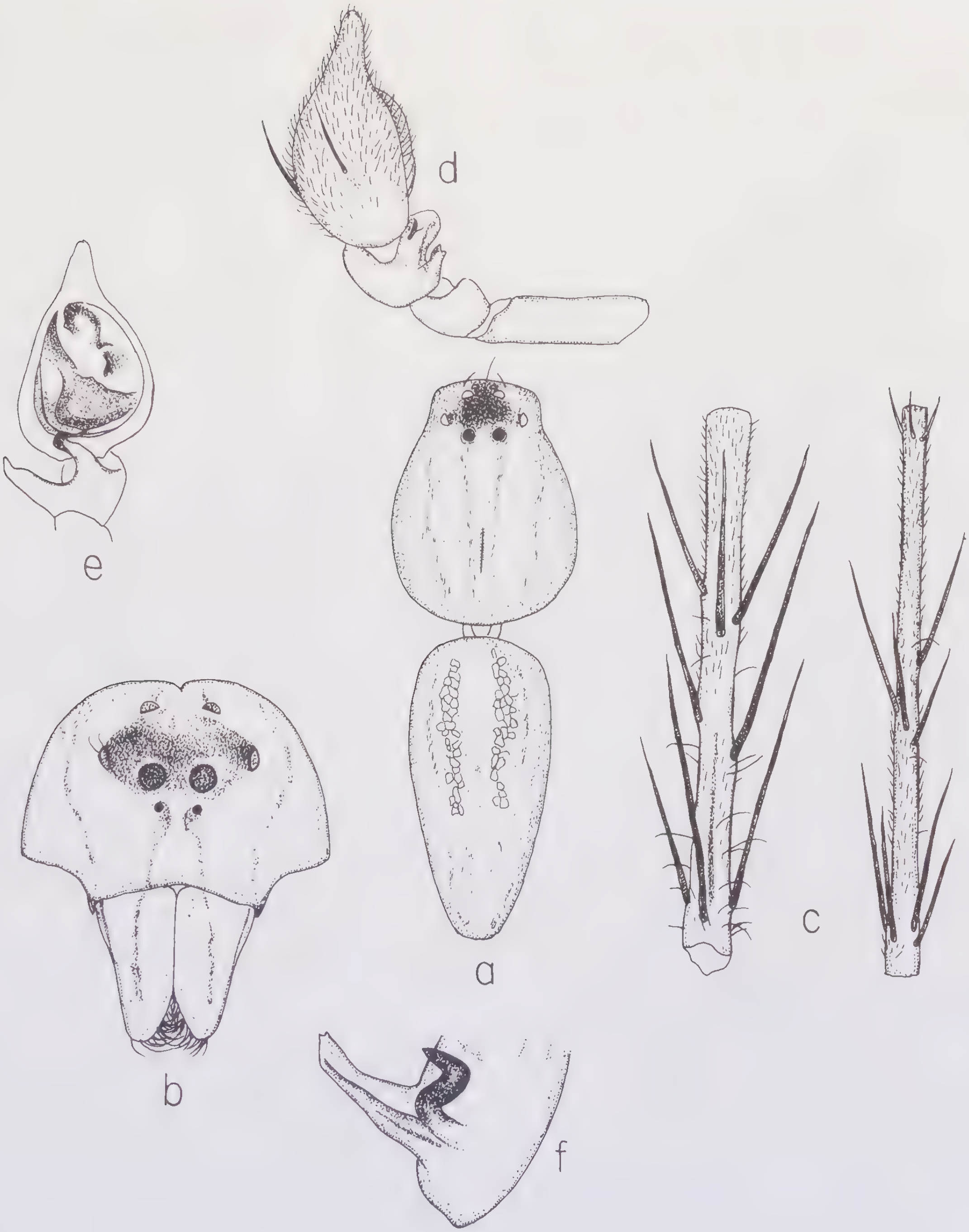


Fig. 198. Male *Oxyopes pingasus* n. sp. (a); frontal view of head (b); dorsal view (c) of tibia I (left) and metatarsus I (right); retrolateral (d) and ventral (e) views of pedipalp; and close-up of retrolateral tibial apophysis (f).

orange-yellow, two median longitudinal bands of black to gray hairs, converging posterior to the long and deep fovea but open towards PLE, subdorsal bands present, running from PME to sides of fovea and extended a little to the base of converged median bands basad of thoracic groove; cephalic area moderately globular with brownish eye somewhat high. Eye diameter (mm): ALE = 0.20, PLE = 0.18, PME = 0.15, AME = 0.10. Eye separation (mm): AME–AME = 0.16, AME–ALE = 0.5, ALE–ALE = 0.18, ALE–PME = 0.18, PME–PME = 0.94, PME–PLE = 0.30, PLE–PLE = 0.25. Clypeus height 4.5 times AME diameter. Sternum yellow with

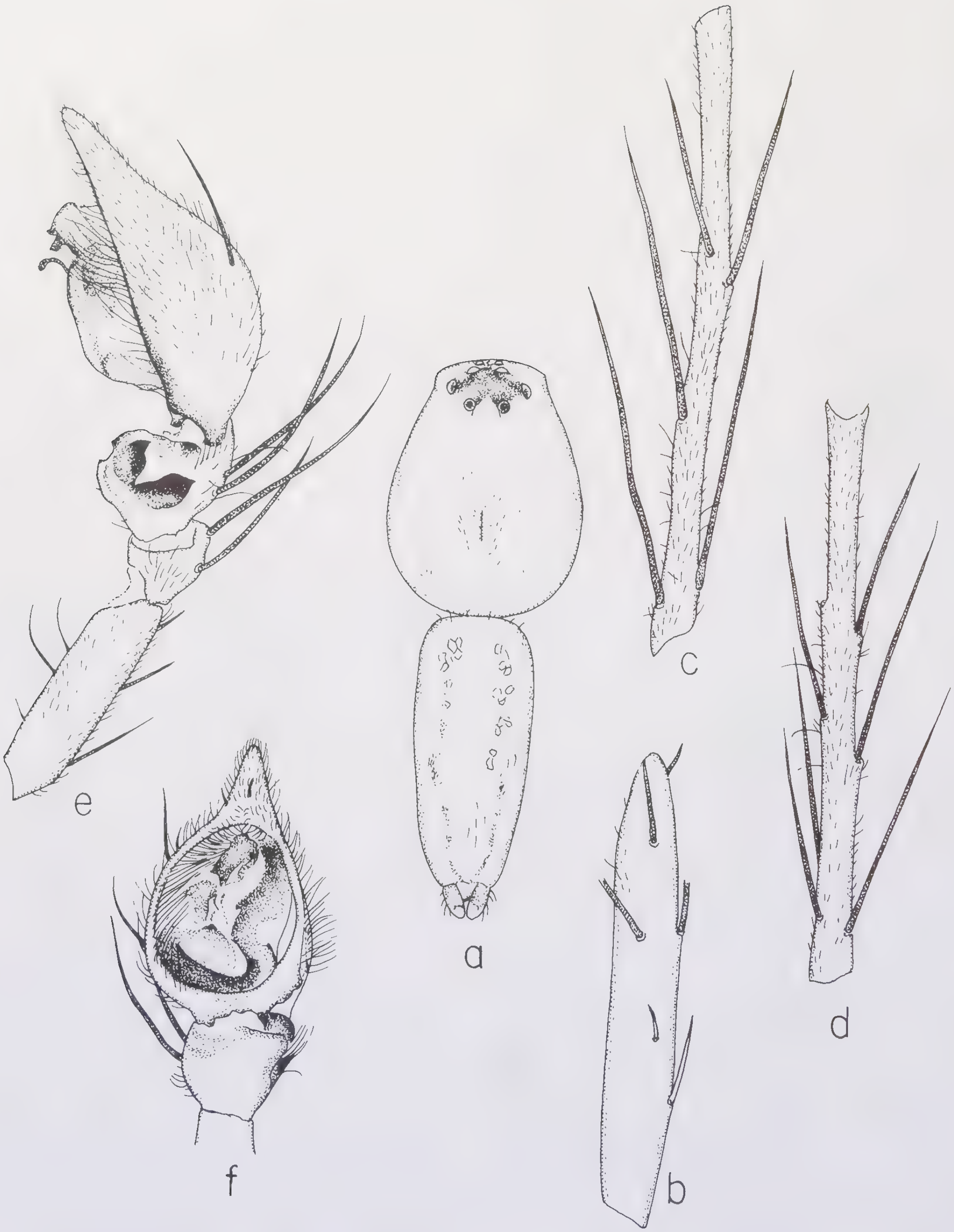


Fig. 199. Male *Oxyopes lineatipes* (C.L. Koch), habitus with legs and pedipalps removed (a); femur I (b); lateral (c) and ventral (d) views of tibia I; and lateral (e) and ventral (f) views of pedipalp.

cavities opposite each coxa, posteriorly tapered, with about 21 long brown hairs, 16 of which in apical one half, as long as wide. Labium yellow, similar to maxillae and sternum, one third longer than wide, apical end concave. Maxillae longer than wide, with a shallow grrove opposite base of pedipalp, scopulae black, and converging apices along scopulae distinct. Chelicerae vertical, fang short, promargin with two teeth and retromargin with one. Legs typical of *Oxyopes*. Femur I with two long prolateral spines in apical one half, distance between two spines as long as distance between tip of femur and apical spine. Leg formula 1243. Metatarsus I : tarsus I = 2.29; metatarsi I–IV longer than all tibiae. Pedipalp distinctly shorter than femur IV; VTA present and RTA absent in tibia, mass of white hairs replace RTA; conductor with a hook-like process anteriorly; sclerotized portion of tegulum tapered basad of conductor; ratio of cymbium length and width = 1.88, cymbium tapers apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.70	1.05	4.00	4.25	1.85	14.85
2	3.30	1.00	3.50	3.70	1.45	12.95
3	2.80	0.90	2.40	2.90	1.10	10.10
4	3.45	0.95	2.90	3.90	1.30	12.50
Pedipalp	1.00	0.30	0.40	–	1.50	3.20

Abdomen, as in other *Oxyopes*, tapers posteriorly, yellowish orange dorsally becoming yellowish white in the cardiac area; laterals each with a longitudinal black band almost converging near the anal tubercle. Venter yellow with a median longitudinal brown band forming a slender U-shaped pattern. Anterior spinnerets yellow, lightly colored compared to the posterior pair, both pairs moderately converging towards apices.

Natural history: The two male specimens were collected by sweep net from 48–55 day-old irrigated rice in August and upland rice in July.

Material examined: PHILIPPINES: *Mindanao Is.*, S. Cotabato Prov., Koronadal-Tupi Area, one male, 18 July 1989, B. Velasco. **INDONESIA:** Java Is., Yogyakarta, Klaten, Kerang Anon Vill., one male, 22 August 1989, A.T. Barrion.

Distribution: Burma, Indonesia, the Philippines, and Thailand.

Oxyopes delmonteensis new species

(Fig. 200a–j)

Description:

Male: Total length 4.80 mm. Cephalothorax 2.20 mm long, 2.00 mm wide, 1.76 mm high. Abdomen 2.60 mm long, 1.32 mm wide, 1.28 mm high. Cephalothorax brownish yellow with a gray longitudinal band along the reddish brown fovea, four grayish striae converging towards fovea, first stria extended towards boss, eyes in a black cylindrical band, two parallel black to gray bands below AME and extended to two thirds length of chelicerae, cephalic area narrower than rounded thoracic area. Eight eyes in four rows, eye length (mm) in decreasing order: PLE = 1.02, ALE = 0.54, PME = 0.53, AME = 0.30; eye diameter (mm): PLE = ALE = 0.18, PME = 0.17, AME = 0.08. AME–AME separation 3.75 times eye diameter, ALE one eye diameter, ALE five times eye diameter, and PME 1.17 eye diameter. Clypeus height 5.8 times AME diameter. Sternum, as in other *Oxyopes*, with spur-like structures opposite coxae II–IV, but with a gray spot opposite each coxa I. Basal half of labium brown with a straight proximal half, apical half yellow-brown with a distal yellow and V-shaped cleft medially, lateral margins almost straight with a slight bulge at midhalf. Maxillae yellow, longer than wide, inner lateral margins straight with scopulae or tip of outer margins indented at midhalf, with serrulae at the distal end. Chelicerae vertical with a dorsal gray band, broad towards base and narrow apically, fangs short, promargins and retromargins with two and one teeth, respectively. Promarginal teeth close to each other (as if bifurcated). Bosses developed. Legs yellowish brown, long, slender, and spinous except tarsi, femora I–IV with a ventral longitudinal gray band and two to four gray spots below it, femur IV with gray bands apically, other gray spots scattered in patellae, tibiae, and metatarsi; dorsum of each entire tibia and basal one third of metatarsus with gray longitudinal band, ventral spines of tibia IV opposite each other in a more diagonal arrangement, tarsi three-clawed with one and five or six teeth in the inferior and superior claws, respectively. Pedipalps yellowish with reddish brown tibial apophyses and cymbium, femur with a grey band, retrolateral tibial apophysis not prominent, connected to VTA with thin sclerotized ridge, VTA with a sharply pointed inner end and a blunt outer end. Lateral sides of tibiae elevated with a row of many short setae along their margins, and with three long setae and five or six trichobothria prominent in dorsal tibiae. Margins of cymbial cavity clothed with white hairs and two long setae, two additional long setae dorsad of cavity, ventroapical one fourth of cymbium with two moderately long setae, cymbial prominence truncate in dorsal view and almost vertical in ventral view. Embolus moderately long and filiform, emanates at base of tegulum and circles one half of tegulum. Tegular process adjacent to circling embolus strongly V-shaped as seen ventrally, with a nipple-like base.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	0.72	2.76	3.00	1.28	10.36
2	2.36	0.68	2.44	2.72	1.04	9.24
3	2.08	0.64	1.88	2.32	0.80	7.72
4	2.48	0.68	2.16	3.00	1.00	9.32
Pedipalp	0.88	0.26	0.43	–	1.29	2.86

Abdomen grayish brown with yellow dot-like specks, distal end broad, slightly concave medially and proximal end tapering, cardiac area partially elevated with grooved margins, apicodistal half with four round sigilla, posterior abdominal end with a yellow spot medially, same color as anal tubercle, and bearing three recurved ridges above it and a diagonal ridge along its lateral margins. Lateral portion of abdomen with yellow elongated pit-like markings, venter black to reddish brown with four parallel rows of longitudinal pit-like yellow-brown dots, book lungs pale yellow. Spinnerets yellow-brown with grayish tinges, posterior pair more grayish than the anterior pair, the latter slightly longer and prominently wider than the former.

Etymology: Named after the type locality.

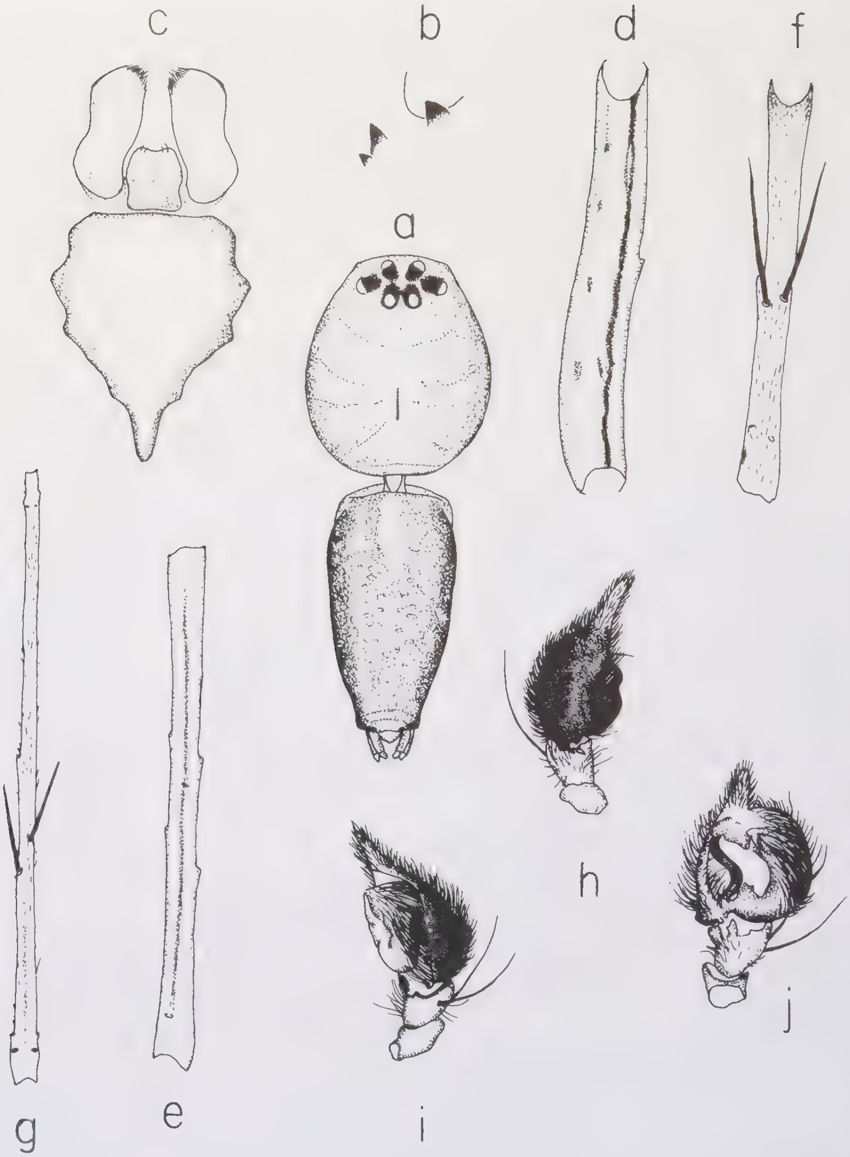


Fig. 200. Male *Oxyopes delmonteensis* n. sp. (a); cheliceral teeth with a bifurcate-like promargin (b); sternum, labium, and maxillae (c); venter of femur I (d); dorsum of tibia I (e); venter of tibia IV (f); dorsum of metatarsus I (g); and lateral (hi) and ventral (j) views of pedipalp.

Natural history: Caught from *Crotalaria* growing as a weed in a weedy upland ricefield in July. The spider was collected preying on a lycaenid moth.
Material examined: PHILIPPINES: *Mindanao Is.*: Agusan del Sur Prov., Talacogon, Del Monte, holotype male, 27 August 1981. A.T. Barrion.
Distribution: Philippines.

FAMILY HAHNIIDAE BERTKAU
(Hahniid Spiders)

Hahniids are small to minute spiders with six spinnerets in a transverse row and the posterior lateral spinnerets in the outermost row. Members of the family possess eight homogeneous eyes, arranged in two rows. AME sometimes minute. Chelicerae without boss and bear weak scopulae. Fang margins oblique and toothed. Labium is free and maxillae slightly converge on the scopulae. Sternum relatively broad. Leg spines or bristles few or lacking, and very similar to Agelenidae in terms of claws, spination, and trichobothria. Tarsi three-clawed, without claw tufts, tenent hairs, or scopulae. Colulus reduced or absent. Tracheal spiracle broad, usually well spaced from the spinnerets, leading into an atrium where two large trunks project forward, producing four bunches of slender tracheoles. Median bunch extended into the cephalothorax. Heart bears four ostria.

Pedipalp of male with a sharp, curved tibial process and a patellar process. Median apophysis either present or absent; if present, it is a simple lobe without a distal hook. Primary conductor absent. Female epigynum indistinct and lightly sclerotized.

The family Hahniidae is distributed worldwide but little is known of their life history and mating habits. It is considered that hahniids build a delicate sheet web on the ground across small cavities and they are presumed to feed on Collembola and other minute insects. Females produced lenticular egg sac attached to the surface where they live.

Two genera – *Hahnia* C.L. Koch, 1841 and *Neoantistea* Gertsch, 1934 – are new records for the Philippines.

Genus *Hahnia* C.L. Koch

Hahnia C.L. Koch, 1841. Die. Arachniden 8: 61.

The genus *Hahnia* is the smallest of all the genera in the family Hahniidae in terms of body length (less than 2.00 mm). It has longer than broad carapace, varying from light to dark brown, with gray to black pattern, and margined with black; AME smaller than ALE; abdomen with oblique and transverse light markings on a gray background; spiracle twice as far from the epigastric furrow as from base of median spinnerets; distal segment of lateral spinnerets half as long as the proximal; femur of pedipalp almost as long as tarsus in the female.

Hahnia tuybaana new species

(Fig. 201a–i)

Description:

Female: Total length 1.66 mm. Cephalothorax 0.74 mm long, 0.60 mm wide, 0.50 mm high. Abdomen 0.92 mm long, 0.76 mm wide, 0.72 mm high. Cephalothorax yellow with heavy gray mottling, dark gray above short fovea, and black ocular area. Cephalic area narrower than the broad thoracic area, not elevated, unlike fovea. Eyes circularly arranged, excluding AME, in dorsal view, eight in two strongly recurved rows in frontal view; eye lengths (mm): PE = 0.28, AE = 0.23. Eye diameter (mm): ALE = 0.07, PLE = PME = 0.065, AME = 0.04; AME approximately 2.7 times ALE diameter, and AME–ALE and PME–PLE separations one fourth ALE diameter. PME–PME separation one half ALE diameter. Clypeus height subequal to PME separation, with a yellow ovoid spot below AME. Sternum dark gray, all sides indented except the broad posterior end, apex triconcave and accommodates bases of maxillae and labium, margins hirsute. Labium wider than long, brown basally and yellow apically, anterior part narrow and dorsoventrally flattened on top. Maxillae yellow-gray, longer than wide with the scopulae in the junction of apico-inner lateral border. Chelicerae grayish yellow with two promarginal and two retromarginal teeth. Fang serrated on its inner one half. Legs yellow with gray bands on both ends of femora, entire patellae, distal portions of tibiae and metatarsi, relatively hairy, like coxae and sternum, leg formula 4132 (note: no left leg II, metatarsus and tarsus of right leg II), tarsi three-clawed, the weak inner claw bifurcated, and with seven teeth, distal outer portions of coxa IV with a spur. Pedipalp three times length of patella of leg I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.60	0.24	0.50	0.36	0.40	2.10
2	0.46	0.20	0.32	–	–	0.98
3	0.50	0.20	0.38	0.34	0.32	1.74
4	0.56	0.22	0.56	0.48	0.34	2.16
Pedipalp	0.23	0.12	0.15	–	0.25	0.75

Abdomen ovoid, gray with a pair of elongated yellow spots around cardiac area and five transverse yellow bands posteriorly venter with two yellow transverse bands projected diagonally towards the anterior. Spinnerets in a transverse row, terminal segments yellow and basal segments gray. Epigynum with cleft anterior margin and truncated posterior margin, spermathecae wide apart.

Etymology: The species was named after the type locality.

Natural history: A single female was FARMCOP-collected in April from rice.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype female, 16 April 1981, T.J. Perfect.

Distribution: Philippines.

Genus *Neoantistea* Gertsch

Neoantistea Gertsch American Mus. Nov. 712: 18.

Neoantistea Gertsch is the largest of all the members in the family Hahniidae. Members of the genus have carapace nearly as broad as long; sternum as wide as or wider than long; AME as large as or larger than ALE; spiracle closer to spinnerets, twice as far from the base of median spinnerets as from epigastric furrow; segments of lateral spinnerets almost equal in length; and pedipalp of male without apophysis in the femur.

This genus is recorded for the first time in the Philippines.

Neoantistea kaisaisa new species

(Fig. 202a–e)

Description:

Female: Total length 2.15 mm. Cephalothorax 0.90 mm long, 0.80 mm wide, 0.50 mm high. Abdomen 1.25 mm long, 1.00 mm wide, 0.80 mm high. Cephalothorax yellowish brown except black eye margins, cephalic area distinct and higher than thoracic area, cephalic area medially with seven or eight long hairs running from posterior to anterior behind PME. Eight eyes in two rows, strongly recurved AE slightly shorter than the strongly procurved PE row. Eye diameter (mm): AME = 0.06, ALE = PLE = 0.05, PME = 0.045. Eye separation (mm): AME–AME = AME–ALE = 0.025,

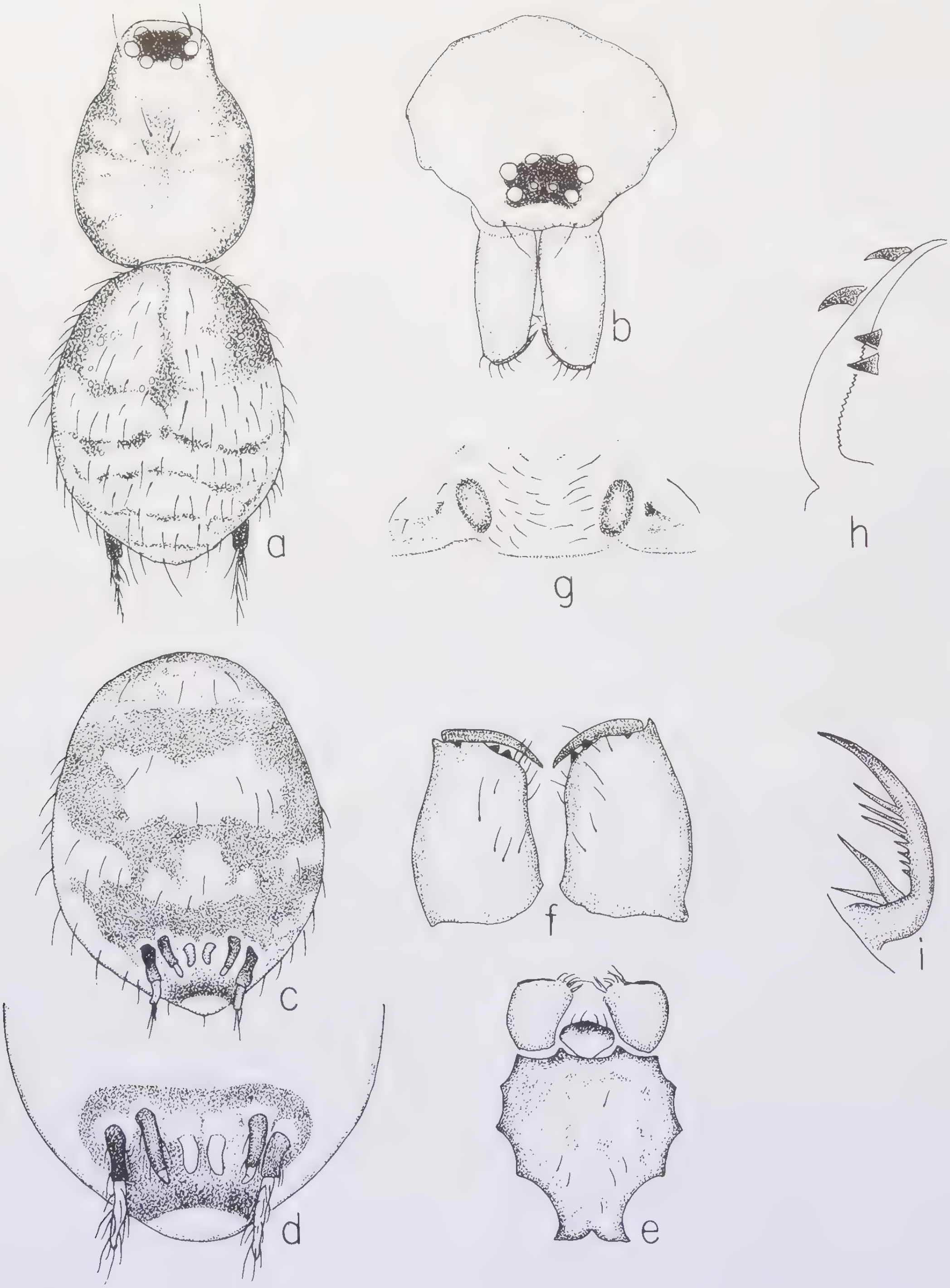


Fig. 201. Female *Hahnia tuybaana* n. sp. (a); frontal view of head (b); abdominal venter (c); spinnerets (d); sternum, labium, and maxillae (e); chelicerae (f); epigynum (g); cheliceral teeth (h); and tarsal claw teeth (i).

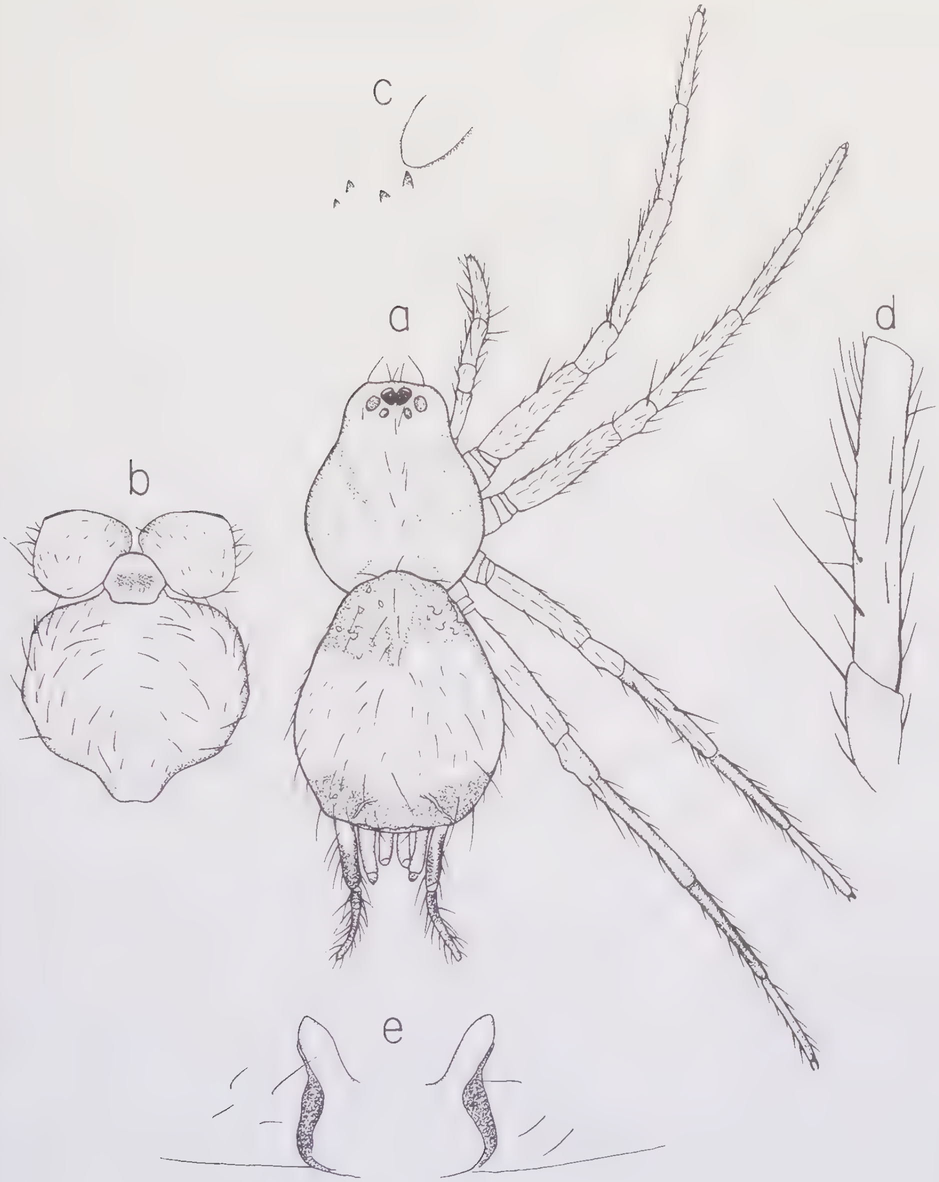


Fig. 202. Female *Neoantistea kaisaisa* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); patella II and tibia II (d); and epigynum (e).

PME–PME = 0.075, PME–PLE = 0.05. ALE and PLE contiguous. AME darker than the rest of the eyes. MOQ narrower in front (0.13 mm) than behind (0.15 mm), anterior width as long as height. Clypeus height large, 1.6 times AME diameter. Sternum yellow with brown hairs, wider (0.58 mm) than long (0.55 mm), lateral margins rounded, posterior end blunt, widely separating coxae IV, and anterior end moderately convex. Labium reddish brown, sunken underneath anterior sternum, wider (0.18 mm) than long (0.15 mm), and anterior margin rounded. Maxillae yellow, longer (0.25 mm) than wide (0.20 mm), almost truncate apically. Chelicerae yellow-brown with two promarginal and two retromarginal teeth, the latter set more posterior of the basal promarginal tooth. Legs pale yellow to grayish brown, with yellow coxae, trochanter, and femora, prolateral seta, venter has eight long setae with five ventroretrolaterals and three ventroprolaterals. Left tibia I with an erect subbasodorsal spine. Tibia II dorsally with five setae, basal one very long and relatively short fourth thicker than the rest of setae. Tibiae III and IV each with a long subbasal seta or spine, similar to that in the patellae. Metatarsus IV with a trichobothrium at 0.8 of its length (TmIV = 0.8) and one apical ventral spine. Leg formula 4231 (note: right leg I deformed and left leg I without metatarsus and tarsus). Pedipalp yellow, longer than any femur, patella with a long dorsal seta, tibia has two dorsal setae, and tarsus spinous, with a small claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.90	0.28	0.71	0.48	0.23	2.60
2	0.88	0.25	0.75	0.55	0.50	2.93
3	0.81	0.26	0.64	0.58	0.49	2.78
4	0.98	0.25	0.78	0.75	0.55	3.31
Pedipalp	0.38	0.13	0.25	–	0.33	1.09

Abdomen black anteriorly and posteriorly, yellowish white medially and entire venter. Entire dorsum with long brown hairs. Spinnerets yellow in basal one half and brown to black in the rest. Outermost pair of spinnerets very long, about 0.83 abdominal height, distal segment as long as proximal, apex of basal segment with a moderately pointed and long spigot, apex of the apical segment has two spigots – an apical and a subapical. Epigynum simple, anterior margin with a pair of horn-like structures or slits, lateral margins sclerotized, extending to the slits and posterior epigynal margin.

Etymology: Specific epithet is a Tagalog word 'kaisa-isa', which means only one.

Natural history: The holotype female was collected by an aspirator from the ground on upland rice on the NW side of Mt. Maquiling in July.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna, Calamba, Makiling Vill., holotype female, 5 July 1989, A.T. Barrion and M. Perez.

Distribution: Philippines.

FAMILY PISAURIDAE SIMON

(Nursery Web Spiders)

Nursery web spiders are active wanderers and do not construct webs to catch their prey. They build a nursery web above the egg sac and guard it until spiderlings leave their egg sac.

The legs are long and tapered. There are eight dark, homogeneous eyes in two rows, the posterior ones somewhat recurved. The powerful chelicerae are toothed, and provided with boss and scopulae. There are numerous trichobothria irregularly distributed in the tibiae, metatarsi, and tarsi.

In structure, members of the family Pisauridae are intermediate between the Lycosidae and the Agelenidae. They are separated from the former family by four prominent characters: (i) second eye row much shorter than the third row, the distance between the posterior eyes more than twice the distance of each eye from the corresponding eye in the second row; (ii) tarsal or foot claws bear many teeth and larger than in Lycosidae; (iii) abdomen more tapered posteriorly; and (iv) male pedipalp bears an apophysis.

Unlike the Lycosids, female pisaurids carry their egg cocoons in their chelicerae and not attached to the spinnerets.

KEY TO THE GENERA AND SPECIES OF NURSERY WEB SPIDERS

1 Patellae I–IV each with two dorsal spines. 1

– Patellae I–II each with one prominent dorsal spine. 3

2 Cephalothorax with three white dorsal longitudinal stripes and abdomen has four with a slightly yellow cardiac area (Fig. 203a); apical one third of tibiae brown; anterodorsal pair of pedipalp's tibial spines obliquely arranged, dorsoretrolateral higher than dorsoprolateral (Fig. 203e); RTA apically blunt in ventral view (Fig. 203g). .... *Pisaura putiana* n. sp. (Fig. 203a–g)

– Cephalothorax with indistinct white longitudinal stripes dorsally; abdomen with a white lateral band and a prominently red-brown cardiac area (Fig. 204a); apical one half of pedipalp's tibia brown; anterodorsal pair of pedipalp's tibial spines almost on the same line; RTA tapered apically (Fig. 204d). .... *Pisaura parangbusta* n. sp. (Fig. 204a–g)

3 Anterior eye row procurved; chelicerae each with two retromarginal teeth. 4

– Anterior eye row strongly recurved to slightly straight; chelicerae each with three teeth usually. 5

4 Male (Fig. 205a); eye diameter: PLE > PME > AME = ALE; ALE–PLE separation five times AME diameter; clypeus height 2.4 times AME diameter; leg formula 2143; RTA prominent, blade-like in ventral view, with tapered anterior and constriction subbasally (Fig. 205hi). .... *Perenethis kawangisa* n. sp. (Fig. 205a–i)

– Female (Fig. 206a); eye diameter: PME > PLE = AME > ALE; ALE–PLE separation slightly more than five times AME diameter; clypeus height 2.6 times AME diameter; leg formula 2413; epigynum with an open mouth-like orifice posterior to the transverse sclerotized ridge, tongue-like median plate inside orifice with diverging spermathecae anterior to the posterior epigynal margin (Fig. 206d). .... *Perenethis unifasciata* (Doleschall) (Fig. 206a–f)

5 Anterior eye row straight to slightly recurved; clypeus height as long as one AME diameter; cephalothorax yellow with a U-shaped brown band dorsally and black band marginally (Fig. 207a); anterolateral corners of clypeus with five or six long white hairs; metatarsus I longer than tibia I, II as long as tibia II; abdomen with a broad median longitudinal brown band, except yellow cardiac area and two pale yellow stripes; epigynum with a pair of orifices on each side of the parallel lateral lobes separated by a longitudinal atrium (Fig. 207cd). .... *Thalassius bottrelli* n. sp. (Fig. 207a–d)

- Anterior eye row distinctly recurved; clypeus height twice AME diameter; metatarsi I–II shorter than tibiae I–II. 6

6 Male; eye diameter: PME > AME; cephalothorax without distinct brown median band, abdomen pale gray-brown dorsally with two brown subglobular spots in apical one third and two white longitudinal lines converging posteriorly (Fig. 208a); spination of metatarsus IV = 0-8(1-1-1-1-1-2-1)-3-3; inferior claw in tarsus II with one long seta-like tooth (Fig. 208d); femur of pedipalp slender, curved and brownish red at midhalf, tibia concave with an apical apophysis, tegulum globular, and apical one half of cymbium yellow and slender (Fig. 208ef); chelicerae brown and projected slightly forward. .... *Thalassius balingkinitanus* n. sp. (Fig. 208a–f)

- Female; eye diameter: AME > PME; cephalothorax and abdomen with distinctly broad median longitudinal band (Fig. 209a); abdomen with four brown dorsal spots in apical one half; spination in metatarsus IV = 0-8(2-1-1-1-2-1)-3-3; inferior claw bears two teeth; femur of pedipalp normal and tarsus single-clawed; epigynum with posterolateral lobes converging and apical ends diverging, each with an obliquely ovoid membranous groove-like structure, with black hairs in between (Fig. 209de). .... *Thalassius albocinctus* (Doleschall) (Fig. 209a–e)

Genus *Pisaura* Simon

Pisaura Simon, 1885. Ann. Soc. Ent. France 6(5): 354.

Pisaura Simon is a lycosid-like genus comprising 21 described species scattered in the Palearctic (12 spp.), Ethiopian (seven spp.), and Oriental (two spp.) regions. Members of the genus are separated from other pisaurids by the following characters: anterior eye row slightly recurved; PME usually larger than anterior eyes; MOQ much wider behind than in front; dorsomedian band of cephalothorax, if present, divided by a longitudinal narrow white stripe in the middle; chelicerae with three retromarginal and promarginal teeth each; patellae I–IV with two dorsal spines; tibia I bears four pairs of ventral spines; tibial apophysis of male's pedipalp distinctly developed; body length 8.6–15.00 mm long.

Pisaura putiana new species
(Fig. 203a–g)

Description:
Male: Total length 8.60 mm. Cephalothorax 3.70 mm long, 2.90 mm wide, 2.20 mm high. Abdomen 4.90 mm long, 2.20 mm wide, 2.10 mm high. Cephalothorax yellowish brown with a broad median longitudinal brown band, provided with a medium and lateral longitudinal white stripes. Eyes with black margins in two recurved rows, shorter AE row (0.83 mm) less recurved than the longer and strongly recurved PE row (1.00 mm). Eye diameter (mm): PLE = 0.23, PME = 0.18, AME = ALE 0.15. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.06, PME–AME = 0.18, PME–PLE = 0.21. MOQ slightly narrower in front (0.40 mm) than behind (0.50 mm), length as long as posterior width. Clypeus height 1.3 times wider than one AME diameter. Sternum yellow, clothed with long brown hairs, slightly longer (1.70 mm) than wide (1.60 mm), anterior end slightly concave and posterior end tapers between coxae IV. Labium yellow, wider (0.55 mm) than long (0.40-mm), anterior end convex, not reaching midhalf of yellow maxillae. Outer one half of maxillae with long brown hairs, distal end brown and apico-inner part with yellow-brown long and converging scopulae. Chelicerae brown, bearing long hairs in the promargin with three teeth, right chelicera has three and left four retromarginal teeth. Legs hairy and spinous, with brownish apical one third of tibiae I–IV. Spination in femur I = 3-0-5/4-5, similar to III; tibiae I = 2-8(2-2-2-2)-2-2, III = 2-6(2-2-2)-2-2; metatarsi I = 0-7(2-2-2-1)-2-2 and III = 0-7(2-2-2-1)-3(1-1-1)-3(1-1-1). Metatarsus I/tarsus I = 2.21. Tarsi three-clawed, each superior claw with 15–16 teeth in leg I and inferior claw bears two teeth. Femur I longer than II, similar to tibia I and II and metatarsus I and II. Leg I > II > III. Pedipalp as long as metatarsus I but shorter than femur I or II, femur with four dorsal and one each of prolateral and retrolateral spines, dorsoapical spine of patella longer than the four longest spines of tibia. RTA strongly developed, cylindrical in retrolateral view with an obliquely cut and serrated apex. Median apophysis tapers to a pointed end, ratio of basal diameter (a) and length (b) = 0.61. Conductor reaches 0.80 length of cymbium towards the hairy apical part with median spines. Tegulum with a nipple-like protrusion in ventral view.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.50	1.65	4.30	4.20	1.90	16.55
2	4.45	1.75	4.05	3.80	1.85	15.90
3	3.70	1.40	3.10	3.20	1.30	12.70
4	–	–	–	–	–	–
Pedipalp	1.50	0.50	0.70	–	1.50	4.20

Abdomen yellow and bears a broad longitudinal brown band dorsally, with a pair of white stripes in the middle and one each in the lateral border, band constricted in the posterolateral one third, with five or six pale transverse white stripes posterodorsally, and brown spines in anterodorsal margin. Venter uniformly yellow except for a pair of white ovoid spots anterior to epigastric furrow. Spinnerets as in the genus.

Etymology: The species was named after the presence of white stripes in the body, in Tagalog 'putian' + a.

Natural history: The holotype male without leg IV was collected by D-Vac machine from slash-and-burn upland rice in August.

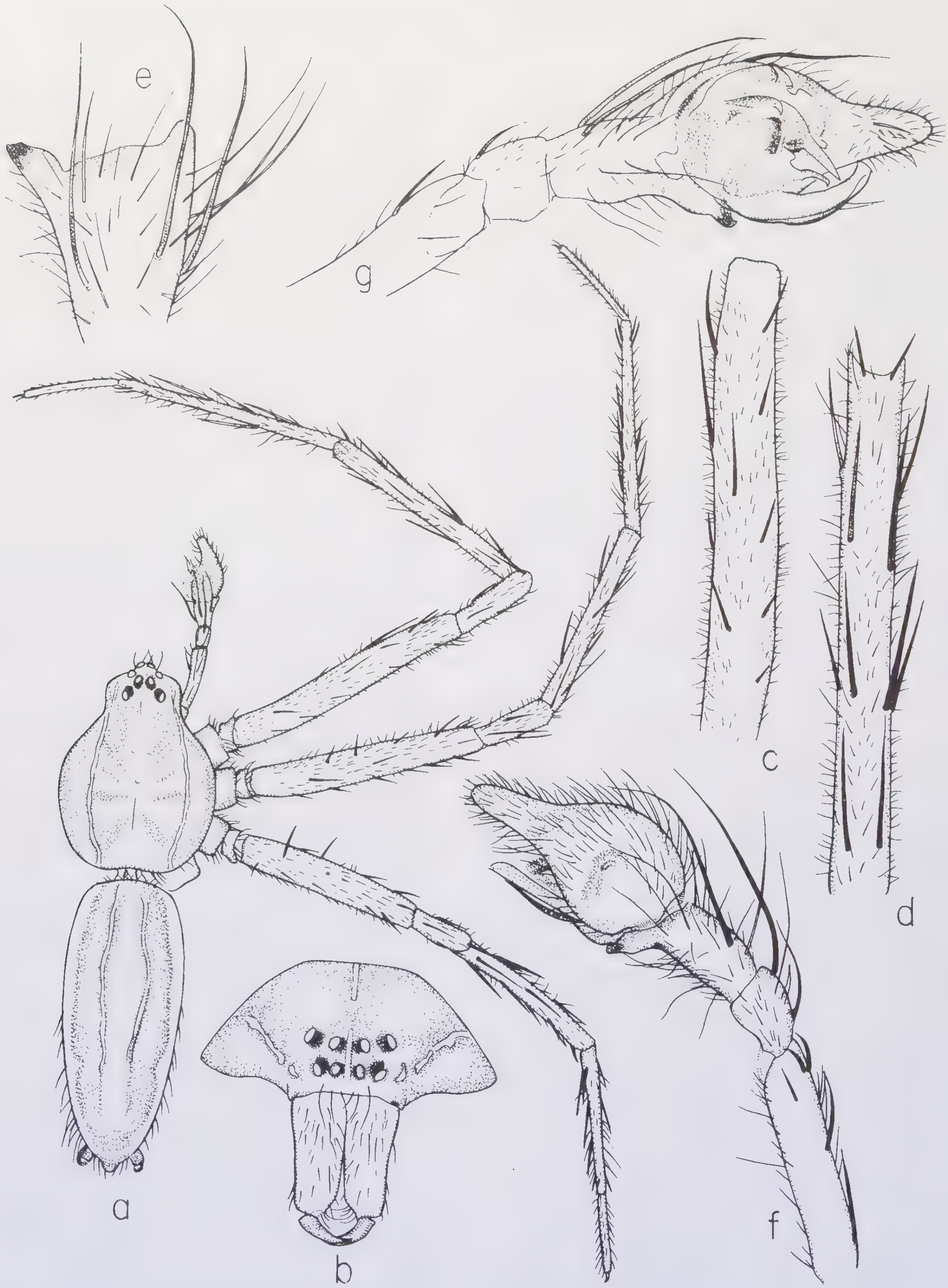


Fig. 203. Male *Pisaura putiana* n. sp. (a); frontal view of head (b); dorsal view of femur I (c); ventral spines of tibia I (d); dorsal view of pedipalp's tibia (e); and retrolateral (f) and ventral (g) views of pedipalp.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 16 August 1985, M. Perez and R. Apostol.
Distribution: Philippines.

Pisaura parangbusta new species
(Fig. 204a–g)

Description:
Male: Total length 9.60 mm. Cephalothorax 4.10 mm long, 3.00 mm wide, 2.50 mm high. Abdomen 5.50 mm long, 2.75 mm wide, 2.80 mm high. Cephalothorax yellow brown without median longitudinal brown band, eye margins black, and dark brown hairs in the prominent fovea. Eight eyes in two recurved rows, AE row (0.93 mm) shorter than the strongly recurved PE row (1.10 mm). Eye diameter (mm): AME = 0.23, PME = 0.20, ALE = PLE = 0.18. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.06, PME–PME = 0.13, PME–PLE = 0.25, ALE–PLE = 0.41. MOQ with fine white hairs coming from posterior of PE rows, passing in between eyes and posterior to PLE, with two or three long brown setae, anterior width shorter than posterior width, length equals posterior width. Clypeus height relatively small, 0.90 of AME diameter. Sternum yellow-gray with many brown hairs, longer than wide, anterior end concave and posterior end tapers between coxae IV. Labium yellow similar to maxillae, wider (0.60 mm) than long (0.50 mm); constricted laterally in basal one third and truncated anteriorly. Maxillae longer than wide, anterior end rounded and outer lateral end almost straight. Chelicerae yellow, vertical, with brown fang. Promargin and retromargin with three teeth each, second and basal retromarginal teeth opposite first and second teeth of promargin. Legs yellow brown, apical one half of tibiae brown similar to patellae, with two dorsal spines. Spination in femora I = 3-0-4-5 and III = 3-0-5-5, tibiae I = 2-8-(2-2-2-2)-2-2 and III = 2-6(2-2-2) -2-2; and metatarsi I = 0-7(2-1-1-2-1)-2-2 and III = 0-7(2-1-1-2-1)-3-3. Tarsi three-clawed, each superior claw of leg I with 14–16 teeth and inferior claw with two teeth. Leg formula 4213. Pedipalp yellow, longer than femora III but shorter than any of femur I, II and IV. Tibia with two long prolateral and one dorsal spines, RTA distinct and tapers to a point. Midtegulum bust-like. Median apophysis sharply pointed apically, with a largely rounded base as seen ventrally, a/b = 1.75. Embolus moderately short, emanates from the lateral side of tegulum. Cymbium with seven spines in ventral view, two prolaterals, one retrolateral and four (two pairs) short ones in apical one third.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.70	1.75	4.60	4.25	1.75	17.05
2	4.90	1.80	4.50	4.10	1.85	17.15
3	4.00	1.40	3.65	3.50	1.70	14.25
4	4.80	1.60	4.15	4.90	2.00	17.45
Pedipalp	1.60	0.55	0.90	–	1.30	4.35

Abdomen brownish gray with a reddish brown cardiac area, cardiac band rounded posteriorly and bears a pair of globular spots in posterolateral one third, laterals with a yellow band constricting twice the gray-brown median band in posterior one third. Lateral sides of abdomen with gray to black patches, darker towards the spinnerets.
Etymology: Named after the bust-like appearance of midtegulum: in Tagalog like = 'parang' + bust + a.
Natural history: The holotype male was isolated from kerosene light trap samples, set in the middle of an upland ricefield in August.
Material examined: PHILIPPINES: *Mindanao Is.*, Agusan del Sur, Claveria, Hinaplanan Vill., holotype male, 8 October 1985, A.T. Barrion and E. Libetario.
Distribution: Philippines.

Genus *Perenethis* L. Koch

Perenethis L. Koch, 1878. Arach. Austral. 1: 980.

Perenethis L. Koch is a very small genus distributed in the Oriental, Australian, Ethiopian and Palearctic regions. It comprises only ten species – five Ethiopian, two Australian, two Oriental and one Palearctic. The genus is easily recognized from other genera in the family by the distinctly procurved AME and strongly recurved PLE; retromargin of chelicera with two teeth and promargin with three teeth; cephalothorax and abdomen each with a distinct, moderately broad, and continuous longitudinal band.

Perenethis kawangisa new species
(Fig. 205a–i)

Dolomedes sp. Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 27.

Description:
Male: Total length 13.60 mm. Cephalothorax 4.40 mm long, 3.50 mm wide, 2.25 mm high. Abdomen 9.20 mm long, 2.60 mm wide, 2.80 mm high. Cephalothorax yellowish brown with a broad, median longitudinal brown band running continuously to the abdomen. Eight eyes in two rows with black margins, lightest in AME. AE row (0.91 mm) slightly procurved and shorter than the strongly recurved PE row (1.38 mm). Eye diameter (mm): PLE = 0.28, PME = 0.18, AME = ALE = 0.15. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.15, PME–PME = 0.24, AME–ALE = 0.35, ALE–PLE = 0.75. MOQ 1.39 times wider behind than in front (0.43 mm), posterior width as long as height. Clypeus height 2.4 times AME diameter. Sternum yellowish gray with a broad median longitudinal yellow band, length as long as wide, and clothed with long and short brown hairs and setae. Labium yellow, constricted laterally in basal one third, slightly wider (0.80 mm) than

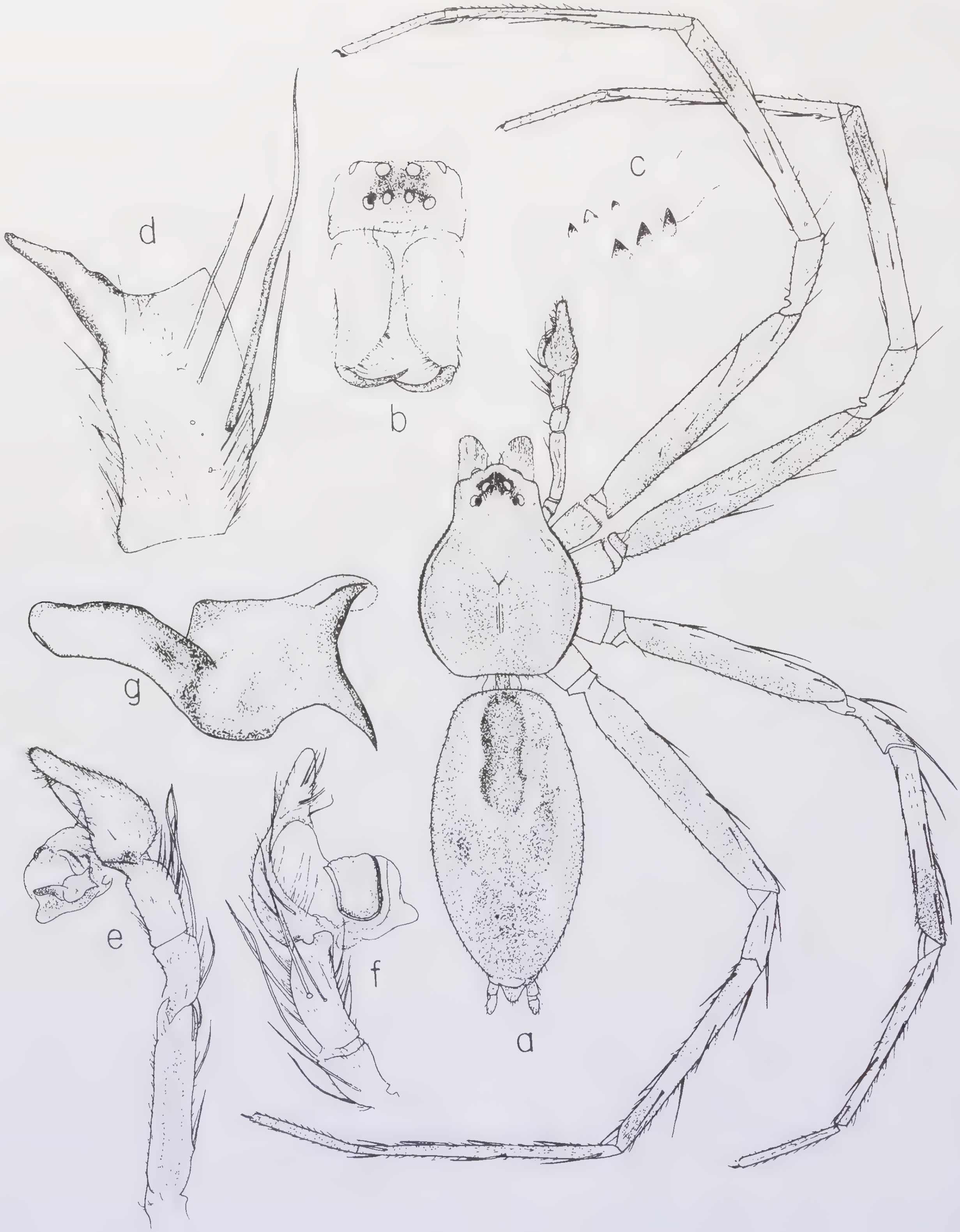


Fig. 204. Male *Pisaura parangbusta* n. sp. (a); frontal view of head including chelicerae (b); cheliceral teeth (c); tibia showing RTA (d); retrolateral (e) and ventral (f) views of pedipalp; and median apophysis (g).

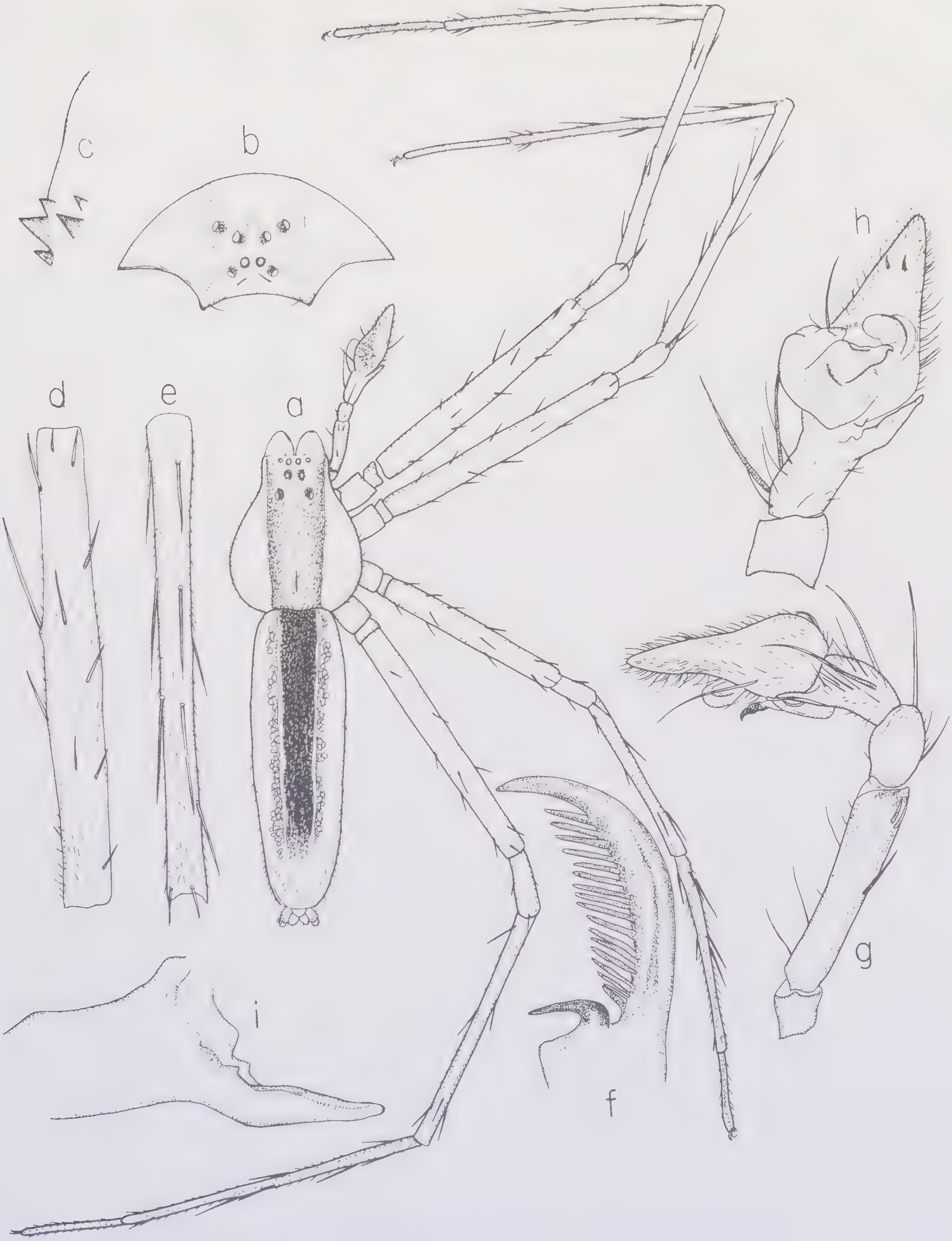


Fig. 205. Male *Perenethis kawangisa* n. sp. (a); frontal view of head (b); cheliceral teeth (c); dorsal view of right femur I (d); venter of tibia I (e); inferior claw of tarsus (f); retrolateral (g) and ventral (h) views of pedipalp; and tibial apophysis (i).

long (0.70 mm), rounded anterior end above midlength of maxillae. Maxillae yellow, longer than wide, outer lateral margins straight and anterior end moderately rounded. Chelicerae yellowish brown except brown fangs. Promargin with three teeth, apical and the large middle teeth close to each other and seem bifurcate. Retromargin with two teeth. Legs yellow in the femora, becoming brownish towards tarsi, long, and bearing moderately thin spines. Spination in femora I = 3-0-4-5, II = 3-0-5-3; tibiae I = 2-8(2-2-2-2)-2-2, II = 2-6(2-2-2)-2-2; metatarsi I = 0-6-3-3, II = 0-8(1-1-1-1-1-3)-3-3. Femora II > I > IV > III, tibiae II > I > IV > III, metatarsi IV > II > I > III. Femur I and tibia II subequal, similar to femur II and metatarsus II and to tibia I and femur IV. Tarsi three-clawed, each superior claw with 15–16 teeth and a small tooth in inferior claw. Leg formula 2143. Pedipalp slightly longer than femur III. Apical one half of femur slightly grayish, basal one half yellow, and bears 3(0-1-2)-0-1-0 spination. Tibia spination = 1-0-2-0, dorsal spine close to the retrolateral, RTA strongly developed and more sclerotized in apical one half, blade-like in ventral view with a constriction basally, and basal one half triangular retrolaterally. Subtegulum moderately bulbous basally and prolaterally. Median apophysis very broad basally, expanded anteriorly and posteriorly, apex tapered and terminating in a hook, in prolateral view with subapicoventral teeth and a thin broad base, ratio of a/b = 0.77. Embolus long and coiled anterior to median apophysis. Cymbium with a long basoprolateral spine, ventrally with two short subapical and two long obliquely set median spines in the semitriangular apical portion of cymbium. Ratio of cymbium length (CYL) and width (CYW) = 2.30. Anterior segment of lorum twice longer than the posterior segment.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.50	1.85	7.40	7.30	3.40	27.45
2	7.60	1.95	7.50	7.60	3.35	28.00
3	5.85	1.50	5.05	5.50	2.10	20.00
4	7.40	1.70	6.75	7.80	2.65	26.30
Pedipalp	2.25	0.60	0.75	–	2.30	5.90

Abdomen yellow with a broad median longitudinal band dorsally, AbL/AbW = 3.54, anterior end with a moderately thick mat of brown hairs, and venter with brown setae. Anterior pair of spinnerets robust and short, with converging circular terminal segment. Posterior pair distinctly longer than the anterior pair.

Etymology: Specific epithet means similar to in Tagalog ('kawangis') + a.

Natural history: The holotype male was netted from rice at vegetative stage in July, and the paratypes were either taken from kerosene light trap and yellow pan trap materials in August and December or rice stubbles in March.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 25 July 1984, M. Perez, four male paratypes, 27 December 1984, A.T. Barrion and R. Apostol, two males, 16 August 1985, E. Rico, same locality as holotype; Ifugao Prov., Banawe, paratype male, 17 March 1979, A.T. Barrion.

Distribution: Philippines.

Perenethis unifasciata (Doleschall)

(Fig. 206a–f)

Dolomedes unifasciata Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 10.

Perenethis venusta L. Koch, 1878. Arach. Austral. 1(2): 980.

P. unifasciata Thorell, 1891. Svenski. Vet. Ak. Handl. 24(2): 61.

Tetragonophthalma unifasciata Strand, 1911. Abh. Senckbg. Ges. 34(2): 165.

Redescription:

Female: Total length 9.16 mm. Cephalothorax 3.50 mm long, 2.75 mm wide, 1.77 mm high. Abdomen 5.66 mm long, 2.16 mm wide, 1.75 mm high. Cephalothorax brown, eye margins black, with white hairs below median band, median longitudinal band broad and dark brown. Cephalic area elevated, truncated anteriorly as seen dorsally, parallel sided and narrower than thoracic area. Thoracic area widest between coxae II and III. Eight eyes in two rows, AE row procurved and PE row strongly recurved, eye length (mm) in decreasing order: PLE = 1.14, AE = 0.74, PME = 0.52, eye diameter (mm): PME = 0.14, AME and PLE = 0.12, ALE = 0.10. AME–AME and AME–ALE separation one AME diameter. PME–PME separation twice AME diameter. PLE–PLE separation nine times ALE diameter. ALE–PLE = 0.61 mm, about five times AME diameter. Clypeus height 2.6 times AME diameter, basal margins with two long and two short setae, two long ones between AME and clypeal margins. Sternum yellow medially and grayish brown laterally, as long as broad, procurved apically, tapering as an extension between coxae IV posteriorly. Margins opposite coxae all indented except coxa I. Labium brown except yellow apex and reddish brown lateral notch, wider (0.65 mm) than long (0.15 mm), recurved along midhalf of yellow-brown maxillae, with parallel outer margins and scopulae at the junctions of inner and apical borders. Chelicerae vertical, each groove with two retromarginal and three promarginal teeth. Legs long, same color as body, leg formula 2413. Spination formulae: tibia I = 2-8-2-2, basal three pairs of ventrals overlapping each other, apical pair one fifth of the longest spine; tibia IV = 2-6-2-2; metatarsi I = 6-5-1-1 and IV = 6-6-1-1, ventral spines of metatarsi alternating. Tarsi with three or four long trichobothria apically, three-clawed with 12 teeth. Leg formula 2413. Pedipalp yellow except brown tibia, femur with five ventral and three dorsal spines, tibia with two prolateral and two dorsal, and tarsus = 2-2-2-1, each claw with nine teeth.

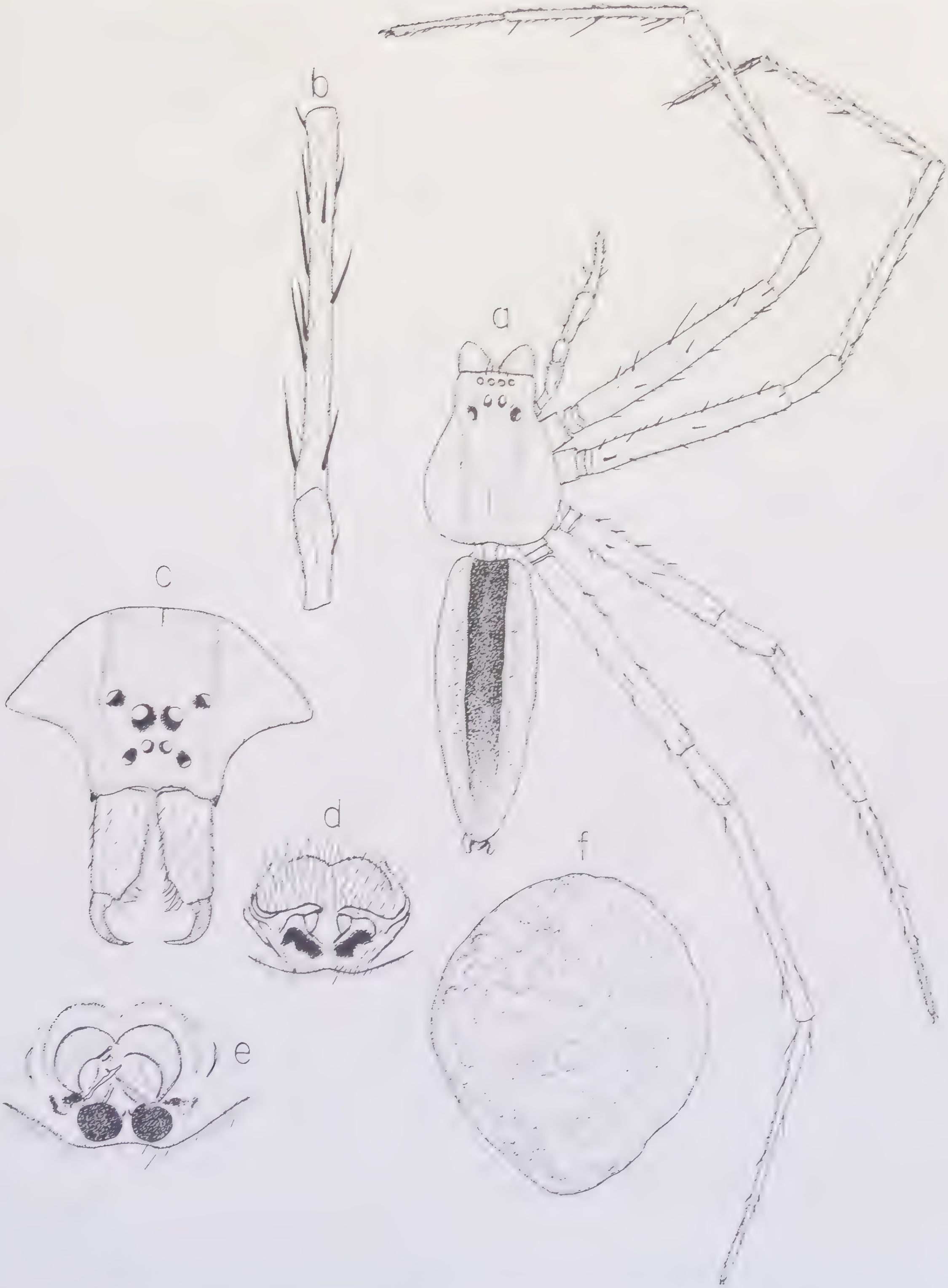


Fig. 206. Female *Perenethis unifasciata* (Doleschall) (a); dorsal view of patella I and tibia I (b); frontal view of head and chelicerae (c); dorsal (d) and ventral (e) views of epigynum; and egg cocoon (f).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.33	1.45	5.16	4.83	2.42	19.19
2	5.50	1.58	5.66	5.16	2.66	20.56
3	4.33	1.16	3.58	3.91	1.66	14.64
4	5.41	1.33	4.75	5.66	2.25	19.40
Pedipalp	1.50	0.66	1.00	–	1.75	4.91

Abdomen elongated, median longitudinal brown band an extension from the carapace, lateral margin yellow to pale brown, thickest along epigynum and thinnest on basal two thirds, venter yellow. Spinnerets yellow-brown, subequal in length, anterior pair twice the size of the posterior. Epigynum an elongated orifice with a parallel septum and half-moon-shaped depressions, lateral margins broadly sclerotized and extended inwards.

Variation: One female specimen has a longer body, 9.75 mm (abdomen = 6.25), wider AE = 0.76 mm, and shorter PLE = 1.12 mm, metatarsus I with 25 vertical hairs ventrally.

Natural history: Specimens were collected from rice stubble in May in Luzon Is. and in Mindanao Is. in July from stunted *Ageratum conyzoides* plants growing in an upland ricefield adjacent to a river bank, each with an egg cocoon measuring 8 mm. Each cocoon contained about 100–300 spiderlings. The Indonesian specimen was collected from irrigated ricefields damaged by *Hydrellia* sp. in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baņos, IRRI Farm, two females, 18 May 1982, M. Perez; *Mindanao Is.*, South Cotabato Prov., Koronadal, Lake Sebu, two females, 19 July 1985, A.T. Barrion. **INDONESIA:** Central Java, Yogyakarta, Magelang Soko, one female, 24 August 1989, A.T. Barrion.

Distribution: Philippines and Indonesia (new record).

Genus *Thalassius* Simon

Thalassius Simon, 1885. Bull. Soc. Zool. Fr. 10: 13.

The genus *Thalassius* is endemic in the Oriental and Ethiopian regions. It is readily recognized from other pisaurids by the presence of the strongly recurved anterior eyes (AE row); clypeus beyond ocular quadrangle; eyes in frontal view show AME–ALE–PME–PLE; chelicerae usually with three retromarginal teeth; tibial apophysis of pedipalp reduced; epigynum with distinct lateral lobes and median septum.

Thalassius bottrelli new species

(Fig. 207a–d)

Description:

Female: Total length 12.95 mm. Cephalothorax 4.05 mm long, 3.25 mm wide, 2.00 mm high. Abdomen 8.90 mm long, 2.50 mm wide; 2.20 mm high. Cephalothorax yellow with a broad submedian U-shaped brown band, containing a narrow stripe in the middle, reaching fovea, and a dark brown marginal band. Eight eyes with black rings, AME and PLE on moderately high areas. AE row (0.96 mm) straight to slightly recurved, shorter than PE row (1.73 mm). Eye diameter (mm): PLE = 0.26, PME = 0.23, AME = 0.20, ALE = 0.18. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.08, PME–PME = 0.30, PME–PLE = 0.43, ALE–PLE = 0.56. MOQ with two white hairs near AME, much wider behind (0.80 mm) than in front (0.50 mm), posterior width 1.3 times longer than length. Clypeus height as long as one AME diameter, bears four long setae anterior to AE, and anterolateral corners each have five long white setae in decreasing length towards the edge. Sternum yellow with gray lateral band, longer (1.80 mm) than wide (1.60 mm), anterior end straight and posterior end tapers to a point. Labium brownish yellow, constricted in basal lateral one third, truncate anterior end above midlength of brown maxillae. Apical one half of maxillae subglobular and more hirsute than basal one half. Chelicerae brown, stout basally and subtriangular apically, and bearing scopulae promarginally anterior to the three teeth. Retromargin with three teeth, longer than those in promargin, long hairs present basad of the retromarginal tooth, and a scale-like tooth present anterior to apicalmost tooth of retromargin. Fang scythe-like with at least 14 blunt teeth in its serrated inner margin. Legs long and slender, brown with gray tinges, and yellow in venter of femora, trochanter, and coxae, and entire tarsi. Metatarsus I > tibia I > femur I. Tibia II as long as metatarsus II. Metatarsus I/tarsus I = 1.08. Spination in femora I = 3-0-5-4 and IV = 4-0-3-5; tibiae I = 2-10(2-2-2-2-2)-1-2 and IV = 2-6(2-2-2)-2-2; metatarsi I = 0-7(2-1-2-1)-3-3 and IV = 0-9(2-2-2-2-1)-3-3. Trichobothria present in dorsum of tibiae, metatarsi, and tarsi. Tarsi three-clawed, each superior claw with 14–15 teeth in leg I and inferior claw with one tooth. Leg formula 1243. Pedipalp slightly longer than tibia IV, yellow with gray markings except brown single-clawed tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	8.60	2.20	9.00	9.10	8.40	37.30
2	6.90	2.00	6.60	6.60	5.10	27.20
3	3.90	1.00	2.80	3.00	1.10	11.80
4	7.80	1.70	6.00	7.20	4.40	27.10
Pedipalp	2.25	1.00	1.20	–	1.60	6.05

Abdomen dark brown with a yellow cardiac area, a pair of median, longitudinal yellow stripes enclosing five pale brown subglobular spots in apical one third, edges of dark brown band black, with broad constrictions in posterior one half and with six or seven transverse black bands anterior to anal tubercle. Laterals with a broad longitudinal yellow band, ventrolaterals with interrupted black stripes. Basal segment of anterior spinnerets 1.75 times diameter of the basal segment of the posterior spinnerets in lateral view. Epigynum with a

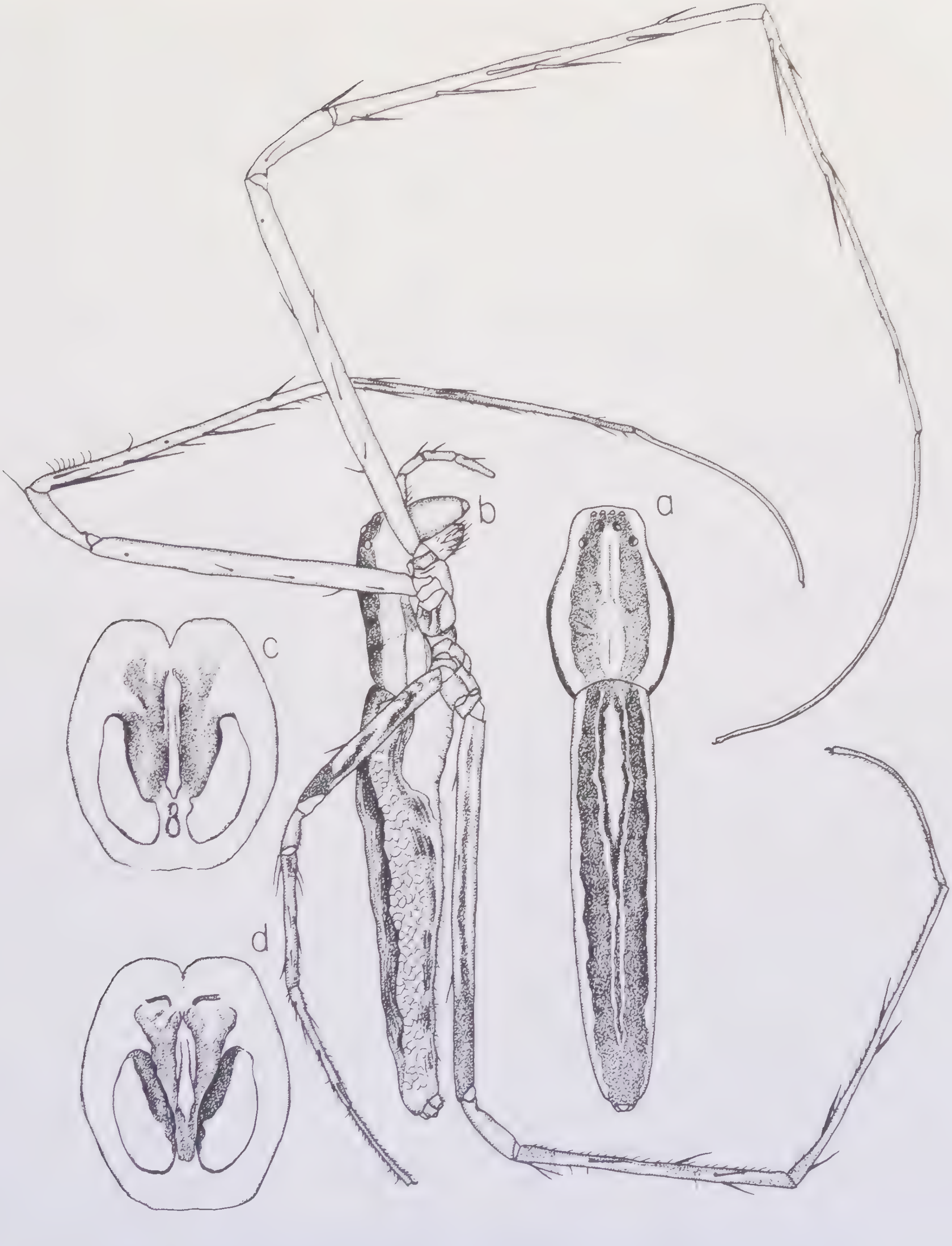


Fig. 207. Female *Thalassius bottrelli* n. sp. (a); side view of body and legs (b); and dorsal (c) and ventral (d) views of epigynum.

pair of ovoid orifices on the lateral side of the nearly parallel lateral lobes, lateral lobes separated by a longitudinal atrium, and orifices separated anteriorly by two plates, with a median pore and bifurcate posterior end.
Etymology: Specific epithet is dedicated to Dr Dale G. Bottrell for his endless support in taxonomic research.
Natural history: The holotype female was D-Vac collected from an upland slash-and-burn ricefield grown on the edge of small stream in September. The smaller paratype female (10 mm long) was sweep-net-collected in the grassy areas in the nursery in Makiling Forest Reservation area in July.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac, holotype female, 10 September 1985, A.T. Barrion; Laguna Prov., Los Baños, Mt. Makiling nursery area, paratype female, 16 July 1991, A.T. Barrion.
Distribution: Philippines.
Remarks: The legs of paratype females brownish gray with yellow patches, metatarsi brown with yellow bands, and trichobothria more prominent in dorsum of tibiae, metatarsi, and tarsi.

Thalassius balingkinitanus new species
(Fig. 208a–f)

Description:
Male: Total length 7.95 mm. Cephalothorax 3.60 mm long, 2.90 mm wide, 1.80 mm high. Abdomen 4.35 mm long, 1.85 mm wide, 1.50 mm high. Cephalothorax brownish yellow with a broad brown median, longitudinal band, black eye margins, dark brown to black long fovea, and five or six brown striae, interspersed with yellow running towards fovea. Eight eyes in two rows, straight AE row (0.75 mm) slightly more than one half length of strongly recurved PE row (1.45 mm). Eye diameter (mm): PLE = 0.23, PME = 0.20, AME = 0.15, ALE = 0.13. Eye separation (mm): AME–AME = 0.13, less than one AME diameter, AME–ALE one third AME diameter, PME–PME = 0.25, PME–PLE = 0.31. MOQ 1.58 times wider behind (0.68 mm) than in front (0.43 mm), anterior width shorter than length (0.50 mm). Clypeus height moderately large, twice AME diameter. Sternum yellow with slightly gray margins, nearly globular except straight apical margin. Labium dark reddish brown, like chelicerae and most of maxillae, longer than wide, and rounded in the slightly yellow apical margin. Maxillae longer than wide, middle areas more dark-colored than apical one third, yellow scopulae on the rounded apex, converging. Chelicerae moderately long, robust, with a strong fang. Retromargin with two wide-apart teeth, and opposite its midseparation is the isolated apical tooth of promargin. Basal two promarginal teeth slightly posterior to basal retromarginal tooth. Legs uniformly yellow, long, and slender, with spines and curved tarsi II and IV. Spination in femur II of right leg = 3-0-6-4 and left leg = 3-0-4-4, femur IV of left leg = 3-0-4-5; tibia II = 1-8(2-2-2-2)-2-3; metatarsus II = 0-6(2-2-2)-3-3 and IV = 0-8(1-1-1-1-1-2-1)-3-3. Leg II longer than IV, femur IV longer than II. Metatarsus IV/tarsus IV = 1.83. Tarsi three-clawed, each superior claw in leg II with 10–12 teeth and inferior claw with a long curved seta-like tooth. Pedipalp yellow-brown with light reddish brown slender and constricted midlength of femur, tip of tibia, and lateral margins of cymbium. Patella as long as tarsus, twice longer than tibia, and moderately swollen at midhalf. Tibia spineless but bears long hairs, particularly in strongly concave venter, apex with a pointed and thumb-like RTA. Tegulum strongly rounded and swollen, supported by a mat of long fine hairs basally. Embolus short, borne on the anterolateral side of tegulum. Apical one half of cymbium slender and hairy.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	–	–	–	–	–	–
2	7.85	2.00	7.50	7.15	5.05	29.59
3	4.00	1.15	3.10	3.25	1.25	12.75
4	8.20	1.75	6.80	7.60	4.15	28.50
Pedipalp	3.90	1.90	0.95	–	1.90	8.65

Abdomen yellowish brown with a broad median longitudinal brown band, tapers posteriorly and broadest in the anterior one third with a pair of brownish black spots. Anterior end with a moderately dense mat of setae. Venter uniformly yellow. Spinnerets in a broad circular ring, anterior pair short but robust and set close to each other with apical segments converging.
Etymology: Named after the slender and constricted femur of pedipalp, 'balingkinitan' (slender in Tagalog) + us.
Natural history: The holotype male was sweep net collected from irrigated lowland rice in September, a caseworm moth *Nymphula depunctalis* (Guenee) in its chelicerae. Leg I was missing.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Narra, near Estrella Falls, holotype male, 29 September 1987, A.T. Barrion.
Distribution: Philippines.

Thalassius albocinctus (Doleschall)
(Fig. 209a–e)

Dolomedes albocinctus Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 9.
Titurius marginellus Simon, 1884. Ann. Mus. Civ. Stor. Nat. Genova 20: 239.
Thalassius marginellus Simon, 1885. Bull. Zool. Fr. 10: 13.
Ctenus fimbriatus Hasselt, 1890. In: Weber, Zool. Erbegn. Nied. O. Ind.: 207.
Dolopoeus cinctus Thorell, 1891. Svensk. Vet. AK. Handl. 24(21): 61.

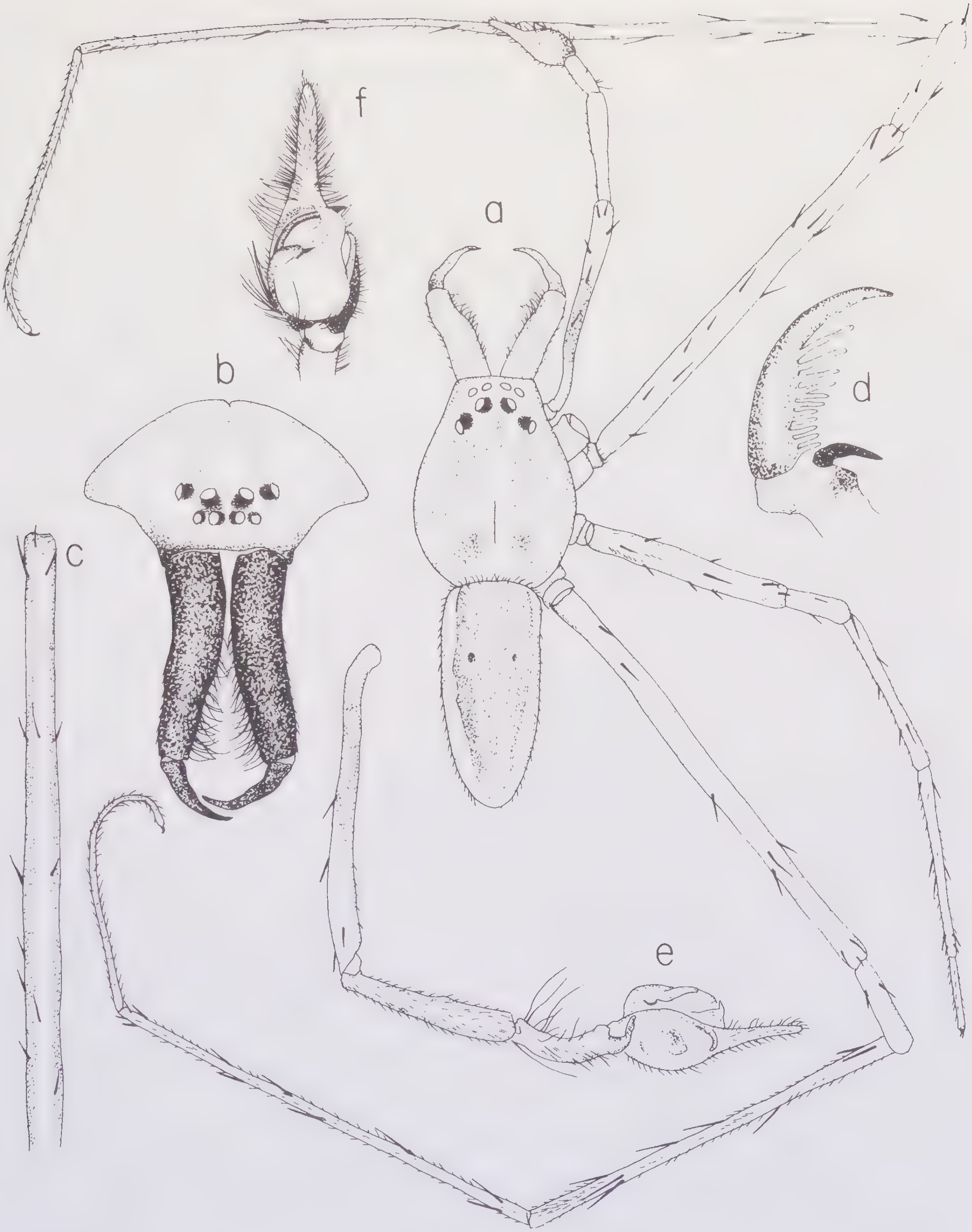


Fig. 208. Male *Thalassius balingkinitanus* n. sp. (a); frontal view of head and chelicerae (b); dorsal view of right femur II (c); inferior claw of tarsus (d); and retrolateral (e) and ventral (f) views of pedipalp.

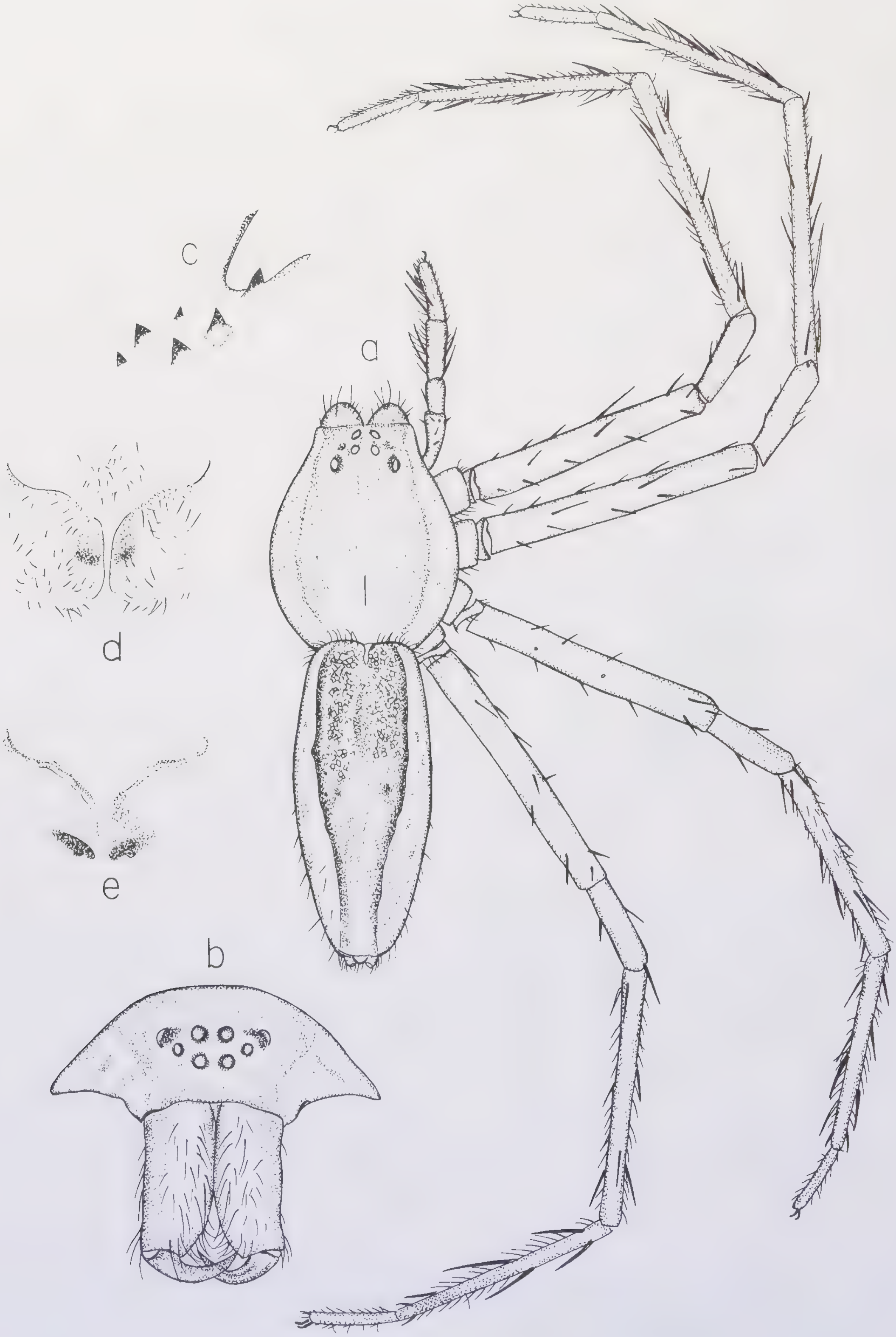


Fig. 209. Female *Thalassius albocinctus* (Doleschall) (a); frontal view of head and chelicerae (b); cheliceral teeth (c); and dorsal (d) and ventral (e) views of epigynum.

Dolomedes albo-cinctus Thorell, 1892. Ann. Mus. Civ. Stor. nat. Genova 31: 471.
Thalassius albocinctus Thorell, 1895. Cat. Spiders Burma, B.M.: 227.
T. simoni F.O. Pickard-Cambridge, 1897. Ann. Mag. Nat. Hist. 6(20): 351.
T. doleschalli F.O. Pickard-Cambridge, 1897. Ann. Mag. Nat. His. 6(20): 352.
T. cinctus F.O. Pickard-Cambridge, 1897. Ann. Mag. Nat. Hist. 6(20): 353.
Dolopoeus doleschalli F.O. Pickard-Cambridge, 1898. Proc. Zool. Soc. Lond. 1898: 28.
D. simoni F.O. Pickard-Cambridge, 1898. Proc. Zool. Soc. Lond. 1898: 28.
D. albocinctus F.O. Pickard-Cambridge, 1898. Proc. Zool. Soc. Lond. 1898: 28.
Thalassius mutillatus Strand, 1913. Arch. Naturgesch. 79(A6): 121.

Redescription:
Female: Total length 14.00 mm. Cephalothorax 6.20 mm long, 5.10 mm wide, 4.00 mm high. Abdomen 7.80 mm long, 4.10 mm wide, 4.00 mm high. Cephalothorax whitish yellow with a very broad, median, longitudinal dark brown band extended to the abdomen and black eye margins. Median band occupies approximately 0.7 width of cephalothorax. Fovea long and distinct. Eight eyes in two strongly recurved rows, AE row (1.48 mm) shorter than PE row (2.03 mm). Eye diameter (mm). PLE = 0.33, AME = 0.31, PME = 0.28, ALE = 0.20. Eye separation (mm): AME–AME as long as one AME diameter, AME–ALE = 0.19, PME–PLE = 0.45, PME–PME = 0.30, PLE–ALE = 0.30. MOQ wider in fron (0.88 mm) than behind (0.85 mm), length as long as anterior width. Clypeus height large, almost twice AME diameter, anterior margin lined with eight to ten long hairs, median area with a converging pair of hairs, and a single upcurved hair just below AME. Sternum yellow, as long as wide, clothed with brown erect hairs, anterior end concave, laterals slightly concave opposite each coxa, tapers posteriorly in front of coxa IV. Labium yellow except brown lateral constriction basal one third, anterior end strongly rounded. Maxillae yellow-brown, hirsute, subglobular in the converging apical one half. Chelicerae light reddish brown ventrally and brown frontlly, with moderately long hairs. Retromargin with three equal-sized teeth. Promargin bears three teeth, apical tooth the smallest and isolated from the two basal teeth. Legs yellowish brown, long, spinous, and hairy. Spination in femora I = 3-0-5-5 and IV = 3-0-4-3, tibiae I = 2-8(2-2-2-2)-2-2 and IV = 1-8(1-2-2-2)-2-2; metaarsus I = 0-7(2-2-2-1)-3-3 and IV = 0-8(2-1-1-1-2-1)-3-3. Metatarsus I/tarsus I = 1.23. Tarsi three-clawed, each superior claw with nine or ten teeth in leg I, and inferior claw with two teeth. Leg formula 4213. Pedipalp's total length in between tibiae II and I, Femur spination = 5(1-1-1-2)-0-1-1, tibia = 2-0-2-0, and tarsus = 0-0-3-2. Claw of tarsus with three or four teeth.

Abdomen with a pale brown median longitudinal band with two pairs of brown spots in anterior one half, laterals yellowish white, and venter with a V-shaped pale brown band. Anterior spinnerets stout basally with light yellow terminal segments converging. Posterior pair slightly longer and more slender than the anterior pair of spinnerets. Epigynum with the posterior end of lateral lobes converging, diverging apical ends, each with an oblique and ovoid membranous groove-like structure, with black hairs in between anteriormost parts, with a pair of parallel brown bands.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.50	2.90	7.20	5.85	2.20	25.65
2	7.70	3.00	7.10	6.20	2.60	26.60
3	6.40	2.60	6.00	5.55	2.25	22.80
4	8.10	2.65	6.75	7.00	2.45	26.95
Pedipalp	2.50	1.05	1.50	–	2.10	7.15

Natural history: The single female specimen was collected from irrigated ricefield in April.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Batarasa, one female, 16 April 1985, S. de Sagun.
Distribution: Burma, Thailand, Philippines, Malaysia and Indonesia.

FAMILY LYCOSIDAE SUNDEVALL

(Wolf Spiders)

The family Lycosidae or wolf spiders are expert hunters that have few peers among their kin, and among all araneids are excelled only by the jumping spiders. They occupy almost every variety of terrestrial habitat, and seem to be at home in all as dominant predators. Some are amphibious types that rarely stay far from water, skating over or diving under the surface when they are menaced. Others have become adapted for a secretive life in areas of shifting, open sands, into which they dig tunnels and on the surface of which they hunt during the night hours. Most numerous in prairie regions, the wolf spiders abound wherever a plentiful insect food supply is available among the grass roots, and where the sunshine penetrates all but the most dense clumps.

Many wolf spiders have deserted their hereditary silk-lined cell for a life in the sun. Others, more conservative, return periodically to the retreat; some spend much of their life there, leaving it only to hunt. Quite a few have improved the retreat by changing it into a deep tunnel in the soil, in certain instances closed by a movable trapdoor. *Pardosa pseudoannulata* (Boesenberg and Strand) hide in soil crevices during summer months and hunt in the cool early morning and late afternoon. If disturbed in flooded ricefields, they dive underwater and stay submerged for up to an hour.

Eight eyes of unequal sizes, homogeneous, all dark in color, and with the posterior row so strongly recurved as to form two rows of two eyes each, anterior eyes the smallest and posterior median (second row) the largest by far; chelicerae relatively strong, with boss, scopula, and toothed margins; labium free; endites more or less parallel and provided with scopulae; palp of the female with claw, superior claw similar, pectinate with a few teeth in a single row; third claw either smooth or with single tooth; trichobothria numerous, irregularly arranged on tibiae, metatarsi, and tarsi; all trochanters with a semicircular notch on the distal margin below; legs usually scopulate and spinose; male palp never provided with an apophysis on femur, tibia, or patella; lorum of pedicel with anterior sclerite rounded behind and fitting into a notch of posterior sclerite.

KEY TO THE GENERA AND SPECIES OF WOLF SPIDERS

1 Posterior spinnerets prominently longer than the anterior pair, distal segment conical and slightly shorter than proximal; AE row usually wider than PME row. 2

– Posterior spinnerets slightly longer than the anterior pair; AE row shorter than PME row. 4

2 Small spiders, less than 5 mm long; cephalothorax and abdomen uniformly gray-brown with a posterodorsal white spot (Fig. 210a); epigynum with a posteromedian slit, becoming T-shaped anteriorly; diverging copulatory tube strongly C-shaped and bears a small accessory gland anterior to spermathecae (Fig. 210ef); sternum uniformly gray. .... *Venonia gabrielae* n. sp. (Fig. 210a–f)

– Medium-sized spiders, more than 7 mm long; cephalothorax and abdomen marked differently; epigynum not T-shaped; sternum with a midlongitudinal black band. 3

3 Leg formula 4321; abdomen ovoid (Fig. 211a); left chelicera with two retromarginal teeth (Fig. 211b); apices of maxillae truncate (Fig. 211d); venter of abdomen with three longitudinal dark bands; epigynum bears a broadly truncate posterior process (Fig. 211ef). .... *Hippasa partita* (Cambridge) (Fig. 211a–f)

– Leg formula 4132; abdomen elongate (Fig. 212a); retromargin with three teeth (Fig. 212b); apices of maxillae broader than base, not truncate; venter of abdomen with a white V-band; epigynum with a tongue-like process (Fig. 212de); tibia of male pedipalp hairy, concave ventrally; median apophysis distinctly transverse, apically bifurcate, with a hooked distal tooth; embolus thin, coiled anterior to apophysis (Fig. 212fg). .... *Hippasa holmerae* Thorell (Fig. 212a–g)

4 Retromargin of chelicerae each with a single large tooth (Fig. 213a); PME distinctly bulges out from carapace; abdomen globular (Fig. 213b); median claw of tarsus bears a pair of long strongly concave or C-shaped setae; median apophysis with two unequally high lobes, both rounded apically (Fig. 213de). ...... *Artoria luwamata* n. sp. (Fig. 213a–e)

– Retromargin with two or three teeth; abdomen longer than wide. 5

5 Femur I with one prolateral spine; carapace usually shiny and low, conspicuous V-mark present anterior to fovea. 6

– Femur I with two or more prolateral spines; carapace not as above. 9

6 Female. 7

– Male. 8

7 Clypeus height one third AME diameter; abdominal dorsum with two longitudinal rows of irregularly connected white spots (Fig. 214a); epigynum narrowly V-shaped posteromedially (Fig. 214f) and hairy (Fig. 214g), anterior spermathecae globular and higher than the thin duct (Fig. 214h). .... *Pirata luzonensis* n. sp. (Fig. 214a–k)

– Clypeus height two thirds AME diameter; abdominal dorsum with an interrupted longitudinal yellow median band in anterior one half and posterodorsal one half and with transversely concave thin yellow bands interspersed with brown (Fig. 216a); epigynum widely V-shaped posteromedially with very few hairs (Figs. 216de), anterior spermathecae elongate and almost as high as diverging duct (Fig. 216f). .... *Pirata blabakensis* n. sp. (Fig. 216a–i)

8 Clypeus height 0.30 AME diameter; AE row shorter than PME row (Fig. 215ab); sternum with six lateral gray spots; femur IV and tibia I with two prolateral spines each; metatarsus I bears six ventral spines; metatarsus I/tarsus I = 2.5. .... *Pirata luzonensis* n. sp. (Fig. 215a–h)

– Clypeus height 0.43 AME diameter; AE row longer than PME row (Fig. 217ab); sternum brown marginally without spots; femur IV bears three prolateral spines and one in tibia I; metatarsus I with seven ventral spines; metatarsus I/tarsus I = 2.25 .... *Pirata blabakensis* n. sp. (Fig. 217a–h)

9 Female. 10

– Male. 23

10 Carapace anteriorly truncate and cardiac area with an inverted yellow V-band (Fig. 218a); midanterior one half of sternum not hairy (Fig. 218b); transverse process of median septum of epigynum bears lateral excavation, and longitudinal process broad at midlength, ratio of a/b = 0.86 (Fig. 218de). .... *Schizocosa cotabatoana* n. sp. (Fig. 218a–e)

– Carapace and epigynum shaped differently. 11

11 Tibiae I and II each with two ventral spines; carapace dark reddish brown and subglobular abdomen gray-brown with yellow mottles and two dorsal pairs of spherical brown spots (Fig. 219a) on more (Fig. 220a); epigynum with a longitudinal to oblique lateral margins of median septum, Y-shaped on both median ends (Fig. 219bc). .... *Arctosa tanakai* n. sp. (Figs 219a–d, 220ab)

– Tibia I with six ventral spines. 12

12 Metatarsus I with five (2-2-1) ventral spines, usually hidden in thick scopulae, metatarsus IV shorter than combined length of tibia IV and patella IV; carapace usually with paired longitudinal streaks inside pale area anterior to fovea. 13

– Metatarsus I with seven (2-2-3) ventral spines not concealed in thick scopulae, metatarsus IV usually longer than combined length of tibia IV and patella IV; carapace usually rather high and narrow, vertical laterally and anteriorly, and dark with pale median and submedian bands. 14

13 Left chelicera with a middorsolateral and midventral teeth (Fig. 222b); abdomen with a pale inverted U-band enclosing cardiac area and two pairs of brown spots at midhalf (Fig. 222c); epigynum with a divided AEM (Fig. 222fg), indistinct hood, and subglobular spermathecae (Fig. 222h). .... *Trochosa alviolai* n. sp. (Fig. 222a–h)

– Chelicerae without the accessory teeth (Fig. 223a); abdomen with a prominent whitish yellow U-band around cardiac area and bears no brown spots (Fig. 223b); epigynum ovoid, narrow anteriorly and wide basally, hood present, spermathecae elongate (Fig. 223de). .... *Trochosa canapii* n. sp. (Fig. 223a–e)

14 Sternum with a median longitudinal gray to black band. 15

– Sternum uniformly yellow without gray to black band. 16

15 Cephalothorax usually with a fork-shaped to dagger-like median band, abdominal dorsum with two median yellow spots and three or four transverse yellow bands posteriorly (Fig. 224ab); sternum with six gray to black marginal spots (Fig. 224de); epigynum bears a tongue-like median septum (Fig. 224f–k). .... *Pardosa pseudoannulata* (Boesenberg and Strand) (Fig. 224a–k)

– Carapace bears a yellow median band radiating from fovea in different lengths, wide anterior to fovea with two pale brown spots posteriorly and two triangular spots adjacent to PLE (Fig. 226a); sternum without marginal spots (Fig. 226b); epigynum with an inverted T-shaped median septum; transverse piece twice longer than the longitudinal process and ratio of width (a) and height (b) = 2 (Fig. 226ef). .... *Pardosa sumatrana* (Thorell) (Fig. 226a–f)

16 Promargin with two teeth. 17

– Promargin with three teeth, or, if only two, transverse process posteriorly concave and beyond epigastric furrow. 18

17 Femora I–IV uniformly yellow (Fig. 228a); tibial and metatarsal ventral spines distinctly long and slender; metatarsus I/tarsus I = 1.25; epigynum with a distal median septum and an apically diverging hood lower than the apically diverging spermathecae (Fig. 228de). .... *Pardosa irriensis* n. sp. (Fig. 228a–e)

– All femora and tibiae with prominent transverse greenish gray bands (Fig. 229a), tibial and metatarsal ventral spines moderately long and slender; metatarsus I/tarsus I = 1.40; epigynum strongly indented and doubly truncate posteromedially, producing two semirounded posterolateral lobes, median septum very small to indistinct (Fig. 229g). .... *Pardosa birmanica* Simon (Fig. 229a–i)

18 Median septum subpointed, clitoris-like, and within large lateral lobes, distinctly below epigastric furrow (Fig. 231d); large comma-shaped hood dorsad of V-shaped median septum in ventral view (Fig. 231ef). .... *Pardosa mackenziei* (Gravely) (Fig. 231a–f)

– Median septum with an inverted T-shaped pattern; hood pattern different, not clitoris-like. 19

19 Lateral margins of carapace bear spots. 20

– Lateral margins of carapace without spots, usually a solid band. 21

20 Carapace with five or six dark spots on each lateral margin (Fig. 233a); spermathecae on a moderately long copulatory tube, separated from anterior epigynal margin (Fig. 233d); hood quadrate; longitudinal process of median septum relatively narrow anteriorly (Fig. 233e). .... *Pardosa patapatensis* n. sp. (Fig. 233a–e)

– Carapacial margins with four dark spots on each side (Fig. 234a); spermathecae on a moderately short copulatory tube, aligned to the anterior epigynal margin (Fig. 234de); hood triangular and longitudinal process of median septum apically broad (Fig. 234e). .... *Pardosa apostoli* n. sp. (Fig. 234a–e)

21 Abdomen subtruncate anteriorly and posteriorly (Fig. 235a); tibia I as long as femur III, bears one prolateral spine; metatarsus I/tarsus I = 1.42; posterior epigynal margin dorsad of epigastric furrow (Fig. 235d); spermathecae moderately elongate and moderately diverging, hood long and converging apically (Fig. 235e). .... *Pardosa magkasalubonga* n. sp. (Fig. 235a–e)

– Abdomen elongate with rounded to tapered posterior ends; tibia I either longer or shorter than femur III. 22

22 Posteromedian epigynal margin indented, hood triangular (Fig. 236h) and spermathecae strongly converging (Fig. 236i); spination in tibiae I = 0-7-2-2 and IV = 2-6-2-2; metatarsus I/tarsus I = 1.50; tarsal claw of pedipalp bears three teeth. .... *Pardosa caliraya* n. sp. (Fig. 236a–i)

– Posteromedian epigynal margin with a distinct widely rounded median process, hood anteriorly high and above spermathecae (Fig. 237de); spination in tibia I = 0-6-1-0; metatarsus I/tarsus I = 1.15; tarsal claw of pedipalp with four teeth. .... *Pardosa daniloi* n. sp. (Fig. 237a–e)

23 Tibia I with one strong dorsal spine (Fig. 238a). 24

– Tibia I without dorsal spine, only dorsal bristle(s). 25

24 Clypeus height 0.86 AME diameter; ratio of carapace length and abdominal length = 1.39 (Fig. 244b); spination in tibiae I = 1-6-2-2 and IV = 2-6-2-2; metatarsus I = 0-6-1-2, metatarsus I/tarsus I = 1.53; pedipalp as long as femur IV. .... *Hogna rizali* n. sp. (Fig. 244a–f)

– Clypeus height 0.70 AME diameter; ratio of carapace length and abdominal length = 0.94 (Fig. 245a); spination in tibiae I = 1-6-1-2 and IV = 1-6-2-2; metatarsus I = 0-7-3-3, metatarsus I/tarsus I = 1.63; pedipalp longer than femur IV (Fig. 245a). .... *Hogna bonifacioi* n. sp. (Fig. 245a–f)

25 Tibia I with three ventral spines; spination in femora I = 2-0-1-0 and II = 2-0-0-0; carapace reddish brown and abdomen yellowish brown with numerous graybrown mottles and two pairs of spherical brown spots (Fig. 221a); median apophysis with a ridge subapically forming two cavities (Fig. 221ij). .... *Arctosa tanakai* n. sp. (Fig. 221a–j)

– Tibia I with six ventral spines. 26

26 Fang with an outer subbasolateral tooth. 27

– Fang without an outer subbasolateral tooth. 28

27 Clypeus height 0.40 AME diameter (Fig. 238a); abdomen with two pairs of small brown spherical spots (Fig. 238b); labium slightly longer than wide; femur I with two prolateral spines; metatarsus II shorter than tibia II; apicodorsal bristles of tibia I and metatarsus I aligned to lateral spines (Fig. 238e). .... *Pardosa sacayi* n. sp. (Fig. 238a–l)

– Clypeus height 0.66 AME diameter; abdomen with one pair of small brown spots (Fig. 239a); labium wider than long (Fig. 239d); femur I with one prolateral spine; metatarsus II longer than tibia II; apicodorsal bristles of tibia I and metatarsus I slightly posterior to lateral spines (Fig. 239e). .... *Pardosa hawakana* n. sp. (Fig. 239a–j)

28 Sternum with gray to black median band, sometimes entirely gray-black. 29

– Sternum not as above. 31

29 Median band on carapace fork-shaped anterior to fovea (Fig. 225a); pedipalp black, median apophysis with two sharply pointed processes (Fig. 225ce). .... *Pardosa pseudoannulata* (Boesenberg and Strand) (Fig. 225a–e)

– Median band on carapace not as above. 30

30 Carapace with a broad yellow median band, tapers posterior to fovea (Fig. 227a); clypeus height 1.15 times AME diameter; labium as long as or slightly longer than wide; sternum with a wide black to gray median longitudinal band; median apophysis with a short process (Fig. 227cd). .... *Pardosa sumatrana* (Thorell) (Fig. 227a–d)

Carapace with a moderately wide yellow band (Fig. 240a); clypeus height 2.5 times AME diameter; labium wider than long and sternum yellowish brown with a black ovoid median band (Fig. 240b); median apophysis strongly transverse, thin, subapically curved posteriorly, and bifurcate apically (Fig. 240de). ... *Pardosa warayensis* n. sp. (Fig. 240a–e)

31 Tibia and patella of pedipalp white, cymbium usually brown. 32

– Tibia and patella of pedipalp not as above. 33

32 Cardiac area brownish yellow (Fig. 230a); all femora and tibiae each with three distinct, transverse greenish gray bands (Fig. 230b); apex of cymbium without spines, terminal apophysis transversely coiled and pointed apically (Fig. 230ceh–j). .... *Pardosa birmanica* Simon (Fig. 230a–j)

– Cardiac area uniformly gray-brown, similar to entire abdomen, except for yellow spots and three pairs of elongated yellow spots (Fig. 241a); apex of cymbium with two spines, terminal apophysis flat – cup in ventral view (Fig. 241de). .... *Pardosa santamaria* n. sp. (Fig. 241a–g)

33 Tip of cymbium without spine. 34

– Tip of cymbium with one or two small to large spines. 35

34 Sternum uniformly yellow; CL : CW = 1.07, AbL : AbW = 1.86, CL : AbL = 1.11 (Fig. 232a); clypeus height a little larger than one AME diameter; metatarsus I with five ventral spines, metatarsus I/tarsus I = 1.78; total length of pedipalp slightly shorter than metatarsus IV. .... *Pardosa mackenziei* (Gravely) Figs 231a–f, 232a–d)

– Sternum with thin black margins; CL : CW = 1.22, AbL : AbW = 1.08, CL : AbL = 1.18 (Fig. 242a); clypeus height 2.3 times AME diameter; metatarsus I with seven ventral spines (Fig. 242b), metatarsus I/tarsus I = 1.67; metatarsus IV prominently longer than total length of pedipalp. .... *Pardosa mabinii* n. sp. (Fig. 242a–e)

35 Tip of cymbium with two large spines, distinct median apophysis with a tooth-like process, and embolus transversely coiled around distal hematodocha and lateral subterminal apophysis (Fig. 234fh). .... *Pardosa apostoli* n. sp. (Fig. 234f–h)

– Tip of cymbium with a short small and a long thin spine or a large single spine. 36

36 Femora I–IV with two or three transverse light brown bands (Fig. 243a); promargin with two teeth (Fig. 243b); clypeus height 1.64 times AME diameter; cymbium with a short and a long apical spine (Fig. 243d–f). ... *Pardosa pahalanga* n. sp. (Fig. 243a–f)

– Femora I–IV not as above; promargin with three teeth; clypeus height barely 0.7 AME diameter; cymbium with a large single spine. 37

37 Clypeus height 0.33 AME diameter; femur II as long as tibia I, longer than femur III; metatarsus I/tarsus I = 1.31; superior claw teeth in two rows in tarsus I; pedipalp as long as combined length of femur I and patella I; median apophysis with a slender basal tooth and a broadly rounded anterior process (Fig. 235h). .... *Pardosa magkasalubonga* n. sp. (Fig. 235f–h)

– Clypeus height 0.71 AME diameter; femur II longer than tibia I, as long as femur III; metatarsus I/tarsus I = 1.12; superior claw teeth in a single row in tarsus I; pedipalp shorter than combined length of femur I and patella I; median apophysis almost triangular with a long ventral process (Fig. 237fh). .... *Pardosa daniloi* n. sp. (Fig. 237f–h)

Genus *Venonia* Thorell

Venonia Thorell, 1894. Bull. Soc. Entomol. Ital. 26: 12.

Venonia Thorell is a small genus of tiny, slender wolf spider that builds a small sheet web. Members of the genus have unicolorous dark or blackish carapace and chelicerae with different tones in different populations; ocular area black; sternum, labium, maxillae, and coxae paler than carapace. Legs pale yellow to greenish gray with annulations in both sexes. Femora I–IV and tibiae of female dark with three paler annuli in femora and a submedian annulus in tibiae. Metatarsi sometimes with indistinct dark apical rings. Leg spination not constant, may have irregularly placed unpaired spines in addition to the normal two or three pairs of ventral spines in tibiae and metatarsi, dorsal spines in one row and longer in the patellae, tibiae, and metatarsi, tarsi spineless. Tarsi bear two short central rows of trichobothria. Metatarsi with two basal and one subdistal rows of trichobothria. Abdomen lacks typical pattern of the family Lycosidae, may have scattered white spots, besides the prominently striking posterodorsal white spot, and venter with distinct dark longitudinal stripes. Spinnerets dark, often black.

Male pedipalp often bears cymbial modifications, median apophysis membranous and distinctly articulated with the tegulum. Epigyna of female usually bear a central depression.

Two species of *Venonia* – *V. micans* (Simon, 1898) and *V. coruscans* Thorell, 1894 – are the only species known in the Philippines.

Venonia gabrielae new species
(Fig. 210a–f)

Description:
Female: Total length 3.50 mm. Cephalothorax 1.50 mm long, 0.95 mm wide, 0.85 mm high. Abdomen 2.00 mm long, 1.20 mm wide, 1.20 mm high. Cephalothorax grayish brown with reddish brown fovea and black eye margins. Eye diameter (mm): PME = 0.13, PLE = 0.10, AME = ALE = 0.06. Eye separation (mm): AME–AME = ALE–AME = 0.03, ALE–PME = 0.05, PME–PME = 0.10, PME–PLE = 0.13, PLE–PLE = 0.30, ALE–PLE = 0.21. Eye row length (mm): AE = 0.28, PME = 0.35, PLE = 0.50. MOQ 2.69 times wider behind than in front (0.13 mm), length twice longer than anterior width. Clypeus height small, as long as one AME diameter. Sternum gray, longer than broad, anteriorly truncate, and blunt posteriorly between coxae IV. Labium grayish yellow, wider than long. Maxillae yellowish to gray, apically truncate opposite short yellow-brown scopulae. Legs yellow except gray femur with yellow bands, short and bearing slender spines. Spination in femora I = 3-0-1-0 and IV = 3-0-0-0; tibiae I = 1 bristle-4-1-0 and IV = 2-4(1-1-2)-2-0; metatarsi I = 0-6-0-0 and IV = 0-6(1-2-3)-3-3. Femur III as long as tibia I; metatarsi I and III subequal; tibia III, metatarsus II, and tarsus I equally long. Metatarsus I/tarsus I = 1.07. Leg formula 4123. Pedipalp yellow, except gray femur and patella, slightly longer than combined length of femur IV and patella IV, and tarsus single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.00	0.40	0.90	0.75	0.70	3.75
2	0.95	0.30	0.80	0.70	0.60	3.35
3	0.90	0.25	0.70	0.75	0.55	3.15
4	1.05	0.50	1.25	1.30	0.80	4.90
Pedipalp	0.55	0.25	0.30	–	0.50	1.60

Abdomen grayish brown with a subglobular posterodorsal white spot, venter uniformly yellow except brown epigynym and black lateral margins of dark gray spinnerets. Posterior spinnerets distinctly diverging, longer than anterior pair, and distal segment tapering to a nipple-like rounded end. Epigynum simple with a posteromedian slit forming a T-mark between the small globular orifices, spermathecae moderately small and spherical with a thick C-shaped duct and small accessory gland.

Etymology: Named after heroine Gabriela Silang.

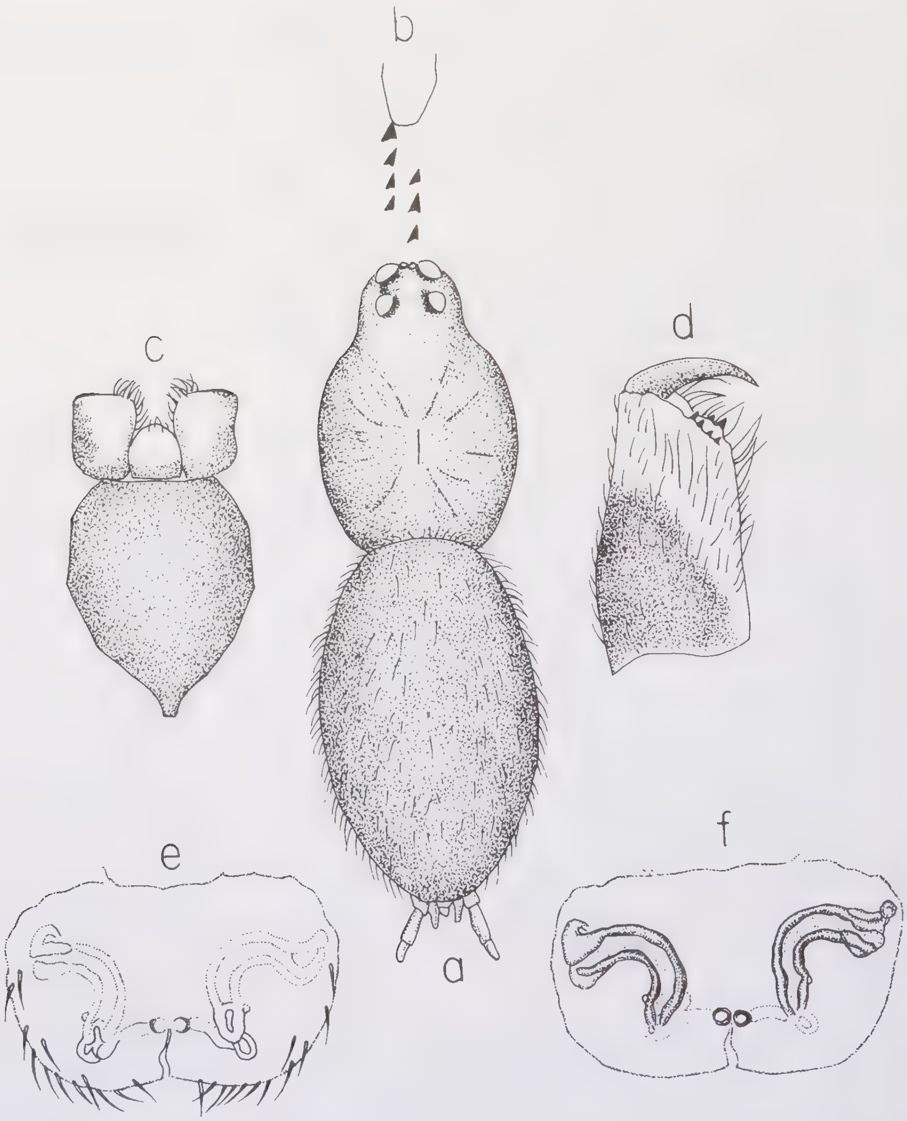


Fig. 210. Female *Venonia gabrielae* n. sp. (a); cheliceral teeth (b; sternum, labium, and maxillae (c); ventral view of right chelicera (d); and dorsal (e) and ventral (f) views of epigynum.

Natural history: The holotype female and one female paratype (partly damaged abdomen without epigynum) were collected from irrigated ricefield in July by D-Vac machine. The other paratype female was pitfall trap-collected in August.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype female, 7 July 1980, T.J. Perfect; one paratype female, same data as holotype; Quezon Prov., Real, Llavac, one paratype female, 1 August 1985, M. Perez.
Distribution: Philippines.

Genus *Hippasa* Simon

Hippasa Simon, 1885. Bull. Soc. Zool. Fr. 10: 31.

The general features of *Hippasa* Simon are the convex, longer than wide cephalothorax with cephalic region pronouncedly narrowed in front; slightly procurved AE row of equal sizes; ocular quadrangle wider than long; sternum heart-shaped, pointed posteriorly between coxae IV, and banded midlongitudinally; wider than long labium; chelicerae relatively strong and retromargin with three teeth; long legs thin and clothed with spines and hairs, leg IV exceptionally long; abdomen longer than wide, with dorsal markings; female epigyne usually with a distinct process; and male pedipalp slender, like the cymbium.

The genus *Hippasa* differs from other genera of wolf spiders in the appearance of the spinnerets. The posterior pair of spinnerets is prominently longer than the anterior spinnerets and the apical segment is as long as the basal piece. AE row slightly wider than the PME row and the area enclosed by the PE row is distinctly wider in the posterior than in the anterior. Sternum usually yellow with a black midlongitudinal band.

They make sheet-like webs with a funnel retreat over which they escape or run, similar to the family Agelenidae.

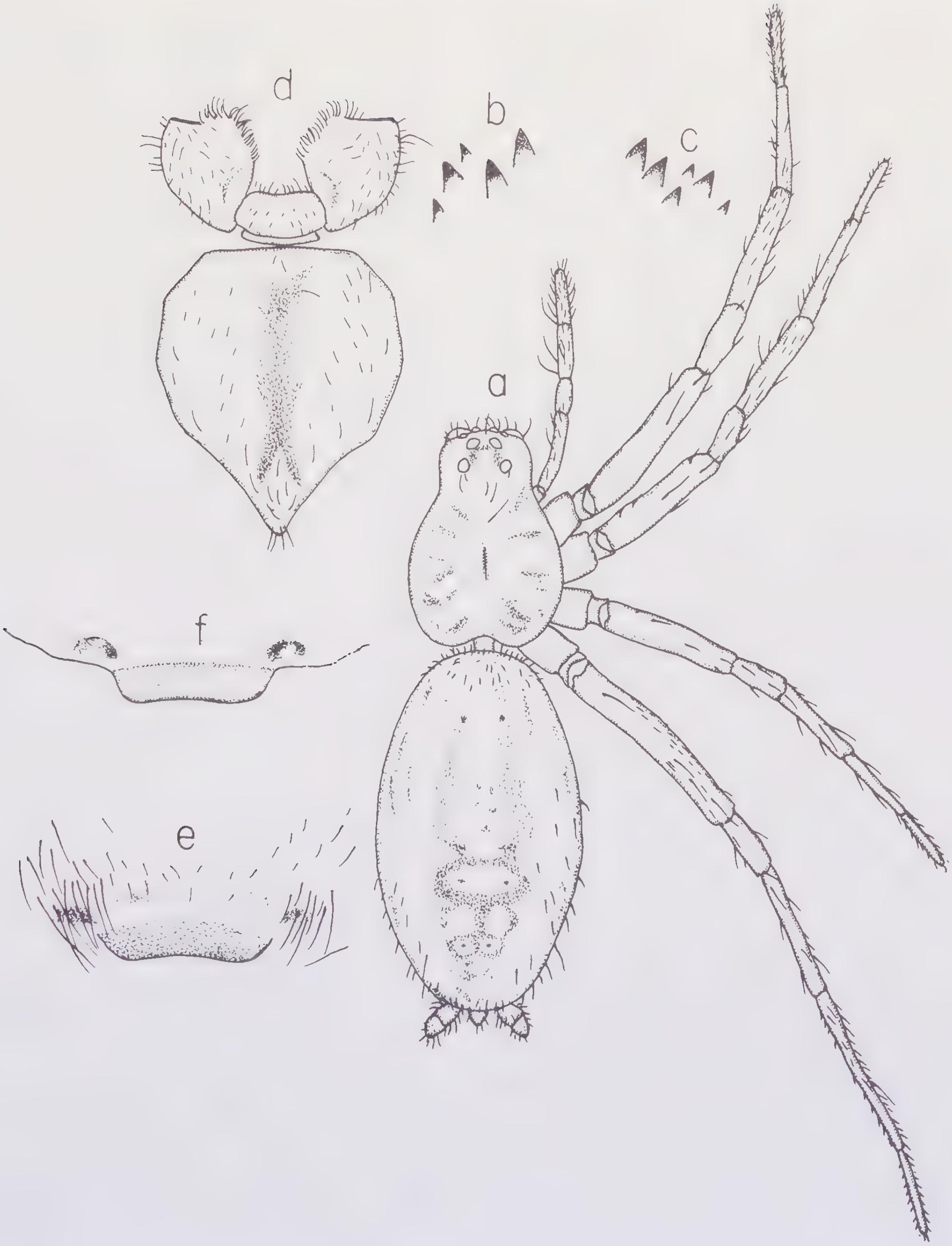


Fig. 211. Female *Hippasa partita* (Cambridge) (a); cheliceral teeth on left (b) and right (c); sternum, labium, and maxillae (d); and dorsal (e) and ventral (f) views of epigynum.

Hippasa partita (Cambridge)
(Fig. 211a–f)

Trochosa partita Cambridge, 1876. Proc. Zool. Soc. 1876: 599.
Hippasa partita Pavesi, 1895. Ann. Mus. Civ. Genova 35: 521.
H. deserticola Simon, 1897. Bull. Mus. Hist. Nat. 3(7): 290.
H. partita Strand, 1907. Arch. Naturg. 73: 293.

Redescription:
Female: Total length 8.00 mm. Cephalothorax 3.30 mm long, 2.35 mm wide, 2.20 mm high. Abdomen 4.70 mm

long, 2.90 mm wide, 2.70 mm high. Cephalothorax pale brown to yellow-brown except black eye margins, convex; with fine pubescence, cephalic area distinctly tapered and narrowed. Eight eyes in three rows, AE–PME–PLE, AE row slightly recurved to straight and longer than PME row. Eye diameter (mm): AME = 0.15, ALE = 0.14, PME = 0.21, PLE = 0.20. Eye separation (mm): AME–AME = 0.03, AME–ALE = 0.11, PME–PME = 0.19, PLE–PLE = 0.58, ALE–PME = 0.15, ALE–PLE = 0.45; PME–PLE = 0.23. MOQ narrower in front than behind, posterior width as long as length. Clypeus height smaller than one AME diameter. Sternum yellow with a median longitudinal black band, slightly longer than wide. Labium as long as wide, yellow with a truncate apex, and constricted in basolateral one third. Maxillae yellow except brown scopulae, wide and truncated anteriorly. Chelicerae yellowish brown, right with three promarginal and retromarginal teeth each and left with only two teeth in the retromargin. Legs yellow with spines and fine hairs, femur sometimes with gray tinge. Venter of femur with erect hairs, spination in legs I = 3-0-2-2 and IV = 3-0-3-1; tibial spination in legs I = 2-6-2-1 and IV = 2-5(1-1-1-2)-2-2; metatarsus I = 0-7-2-1. Metatarsus I longer than tibia I. Leg formula 4321. Pedipalp single-clawed at tarsus, longer than all femora and all metatarsi.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	0.70	1.70	1.95	1.30	7.90
2	2.40	0.90	1.90	2.00	1.35	8.55
3	2.45	1.00	2.00	2.25	1.30	9.00
4	3.10	1.20	2.95	3.60	1.85	12.70
Pedipalp	1.15	0.70	0.85	–	1.05	3.75

Abdomen light brown with greenish brown and faded yellow patches. Venter yellow. Anterior pair of spinnerets short, subglobular, and stout compared to the slender and long posterior pair. Epigynum bears a truncate lip-like plate with lateral depressions.

Natural history: The examined female specimen was collected from ricefield in April.

Material examined: INDIA: Tamil Nadu Prov., Madurai, one female, 2 April 1990, M. Venugopal.

Distribution: Egypt, Saudi Arabia, India and Pakistan.

Hippasa holmerae Thorell
(Fig. 212a–g)

Hippasa holmerae Thorell, 1895. Spiders of Burma: 218.
Hippasa rimandoi Barrion, 1981. Philipp. Entomol. 5(1): 1–4. n. syn.

Redescription:

Female: Total length 8.99 mm. Cephalothorax 2.83 mm long, 2.40 mm wide, 2.00 mm high. Abdomen 6.16 mm long, 2.33 mm wide, 2.40 mm high. Cephalothorax yellowish brown, hairy dorsally and along margins, with V-shaped mark projected towards moderately high cephalic region. Fovea conspicuous. AE row almost straight to slightly procurved, medians smaller than laterals. PE row strongly recurved, all bigger than anterior eyes. Eye diameter (mm): PLE = 0.26, PME = 0.21, AME = 0.13, ALE = 0.10. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.10, ALE–PME = 0.20, PME–PME = PME–PLE = 0.18, PLE–PLE = 0.64, ALE–PLE = 0.45. Eye row length (mm): AE = 0.73, PME = 0.60, PLE = 0.98. MOQ 1.58 times wider behind than in front (0.38 mm), length 1.26 times longer than anterior width. Clypeus height 1.15 times AME diameter. Sternum yellow with a grayish black median longitudinal stripe, longer than wide. Labium and maxillae both yellow. Chelicerae each with three retromarginal and promarginal teeth, arranged in decreasing height in the inner region and second tooth the largest in the promargin. Legs yellow with brown hairs and spines. Spination in femora I = 3-0-2-3, II–III = 3-0-3-3, IV = 3-0-3-1; tibiae I = 0-6-2-1, IV = 2-6(2-1-1-2)-2-2; metatarsi I = 0-7(2-2-3)-2-1, IV = 0-8(1-1-1-1-1-3)-3-3. Metatarsus I/tarsus I = 1.54. Leg formula = 4132. Pedipalp as long as combined length of patella IV and tibia IV, tarsus with a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.70	1.20	2.25	2.15	1.40	9.70
2	2.60	0.95	2.30	2.70	1.45	10.00
3	2.60	1.05	2.25	2.45	1.30	9.65
4	3.35	1.10	3.10	3.90	1.80	13.25
Pedipalp	1.55	0.55	0.90	–	1.20	4.20

Abdomen bears a gray-brown tree-like pattern with brown cardiac area as base and five or six transverse yellow bands dorsally. Venter of abdomen with a white V band. Anterior spinnerets short, only about one half length of the posterior pair. Epigynum with a tongue-like scape and converging spinnerets. Tip of scape blunt and slightly rounded.

Male: Total length 6.70 mm. Cephalothorax 3.00 mm long, 2.15 mm wide, 1.80 mm high. Abdomen 3.70 mm long, 1.70 mm wide, 1.80 mm high. Cephalothorax brown with black eye margins, three or four gray striae radiating from long brownish red fovea. Eye diameter (mm): PLE = 0.21, PME = 0.20, AME = 0.15, ALE = 0.13. Eye separation (mm): AME–AME–ALE = 0.08, ALE–PME = 0.19, PME–PME = 0.20, PME–PLE = 0.16, PLE–PLE = 0.53, ALE–PLE = 0.45. Eye row length (mm): AE = 0.34, PME = 0.56, PLE = 0.80. MOQ 1.65 times wider behind than in front. Length 1.32 times longer than anterior width (0.34 mm). Clypeus height 0.60 AME diameter. Sternum, labium, and maxillae similar to female. Chelicerae with three teeth each in promargin and retromargin. Spination in femora I = 3-0-2-3, II = 3-0-4(2-0-2)-3 and III = 3-0-3-3; tibiae I = 0-6-2-0, II = 0-4(1-2-2)-2-1, and III = 2-4(1-1-2)-2-2; metatarsi I = 0-7(2-1-1-2-1)-2-1, II = 0-7(1-1-1-1-2-1)-3-2, and III = 0-7-3-3. Metatarsus

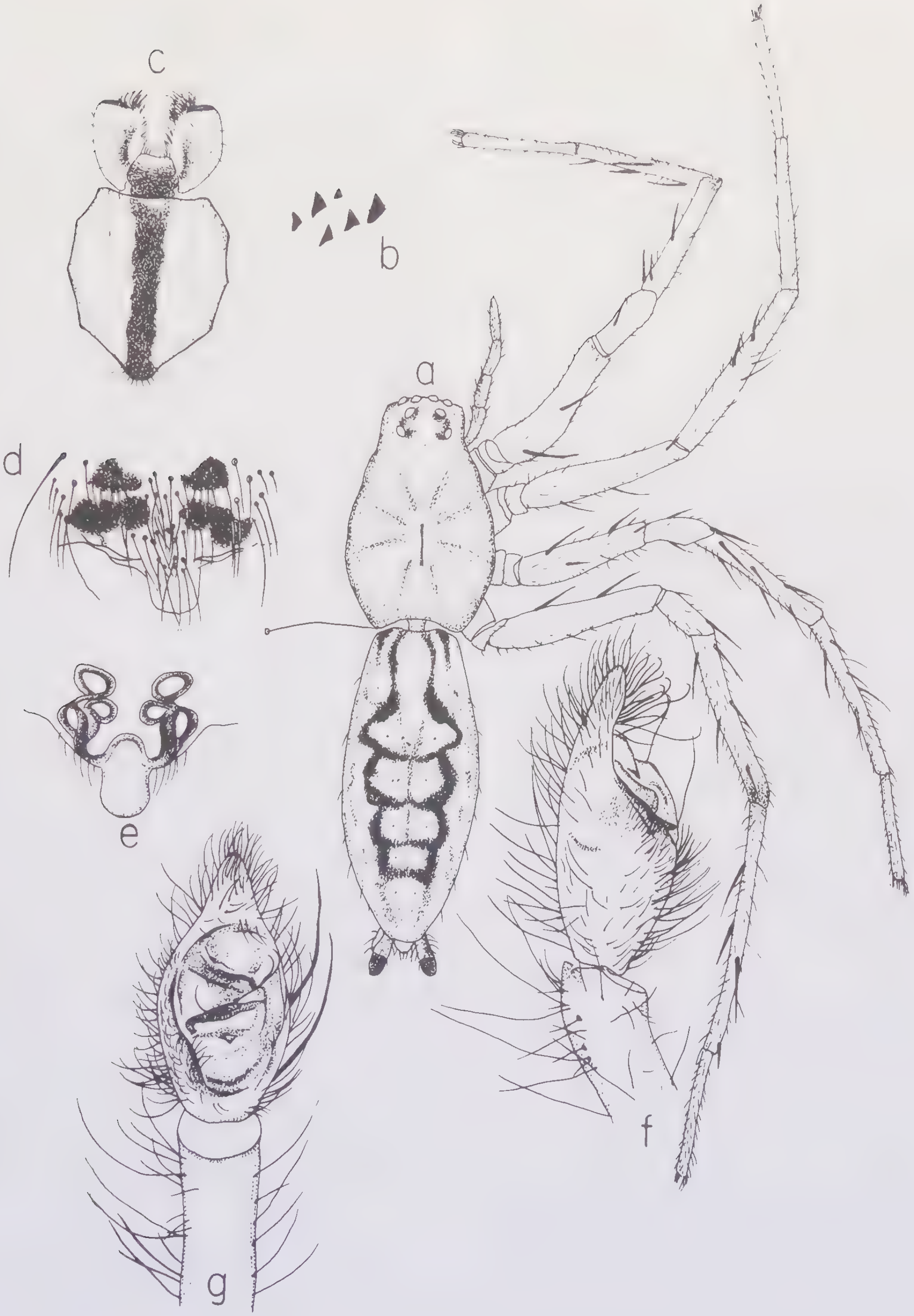


Fig. 212. Female *Hippasa holmerae* Thorell (a); cheliceral teeth (b); sternum, labium, and maxillae (c); dorsal (d) and vental (e) views of epigynum; and retrolateral (f) and ventral (g) views of male pedipalp.

I/tarsus I = 1.66. Leg formula 4132. Pedipalp slightly longer than metatarsus IV. Tibia slightly concave ventrally and wrapped with hairs, similar to cymbium. Median apophysis relatively large and transverse, bifurcate apically, with the apical one provided with a small hook. Embolus thin and coiled anterior to the apophysis. Terminal process borne anterior to the embolus, thinly sickle-shaped. Cymbium without apical tooth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.70	1.10	2.30	2.40	1.45	9.95
2	2.50	1.10	2.25	2.50	1.50	9.60
3	2.60	0.90	2.10	2.70	1.55	9.85
4	3.35	1.00	3.00	4.00	2.00	13.35
Pedipalp	1.50	0.60	1.00	-	1.00	4.10

Abdomen grayish brown, mottled with yellow spots and transverse yellow bands dorsally, a pair of yellow longitudinal bands anteriorly on each side of brown cardiac area, two pairs of yellow spots posterior to cardiac area, three transverse yellow bands in posterior one third, and three transverse black bands anterior to anal tubercle. Posterior spinnerets brown, basal segment cylindrical and much longer than the rounded apical segment with globose tip.

Natural history: The specimens were collected from ricefields, levees, and grasslands year round, adults were more common in August to May.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, 18 females, five males, and 21 immatures, 17 May 1980, A.T. Barrion; Liliw, Tuybaana, two females, two males and eight immatures, 16 August 1980, T.J. Perfect; Mindanao Is., Zamboanga del Sur Prov., Margosatubig, three females, 28 June 1985, A.T. Barrion.

Distribution: Philippines, Sri Lanka and India.

Genus *Artoria* Thorell

Artoria Thorell, 1877. Ann. Mus. Civ. Genova 10: 531.

Members of the genus *Artoria* Thorell are small (2.7–4 mm) and moderately slender wolf spiders endemic in the Australian region. *Artoria* consists of only two species – *A. parvula* Thorell (from Celebes, Indonesia, and Bismarck Archipelago) and *A. palustris* Dahl (Bismarck Archipelago). The genus is easily recognized by the longer than wide cephalothorax and abdomen; cephalic area narrowed from the thoracic area, parallel sided and large PME bulging out of carapace in dorsal view; eye diameter: PME > PLE > AME ⩾ ALE; eye length: PME > PLE > AE; sternum slightly longer than wide; labium wider than long; chelicerae with a single tooth in retromargin; tibia I and metatarsi I bear three pairs of ventral spines; abdomen usually brown and subglobular.

Artoria luwamata n. sp. is a new genus and species record in the Philippines.

Artoria luwamata new species

(Fig. 213a–e)

Description:

Male: Total length 2.73 mm. Cephalothorax 1.55 mm long, 1.16 mm wide, 0.90 mm high. Abdomen 1.18 mm long, 0.88 mm wide, 0.75 mm high. Cephalothorax brown except broadly black eye areas, black striae directed towards fovea, and broadly diverging striae anterior to fovea separate the cephalic and thoracic areas, dorsomedian with a longitudinal yellow-brown band. PE area black and lined with short yellow hairs, longer hairs in between PME. Eye length (mm): AE = 0.35, PME = 0.73, PLE = 0.65. Eye diameter (mm): AME = 0.05, ALE = 0.04, PME = 0.26, PLE = 0.20. Eye separation (mm) in the AE row: AME–AME = 0.07, AME–ALE = 0.06. Clypeus height twice AME diameter. Sternum yellow to light brown, a little longer than wide, setaceous towards margins except bare mid-posterior one half, posterior tip rounded with three or four yellow erect hairs and anteriorly truncated. Labium mostly yellow with brown basal one third, wider than long, and cleft along midanterior margin. Maxillae longer than wide, yellow except brownish yellow scopulae. Chelicerae brown with gray tinge, retromargin with a single tooth, and promargin has three. Midtooth of promargin the largest. Midventer of chelicerae with a brush of long hairs. Legs brown except dark brown femora, patellae, and three fourths of tibia in leg I. Venter of femur with distinct setae, tibia I and metatarsi I bear three pairs of spines each, midprolateral spine long, almost reaching tip of apicoprolateral spine. Dorsum of tibia I with one subbasal erect seta. Tibia IV with the longest trichobothrium at 0.26 mm length of tibia. Tarsus with a median claw bearing a pair of long, strongly concaved C-shaped setae. Leg formula 4312. Pedipalp as long as metatarsus IV, dark brown except yellow apical one half of cymbium. Tibia shorter than patella, bears white hairs anterodorsally and midprolaterally, midventroprolaterals with three or four brown slender setae, and midventroretrolaterals with an aggregate of brown hairs and a seta. Median apophysis with two unequally high lobes, both anteriorly rounded. Cymbium without an apical spine.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.81	0.31	0.85	0.80	0.51	3.28
2	0.75	0.38	0.78	0.85	0.44	3.20
3	0.99	0.38	0.88	1.05	0.53	3.83
4	1.40	0.30	1.08	1.55	0.60	4.93
Pedipalp	0.50	0.30	0.25	-	0.50	1.55

Abdomen brown and globular, anterior end more dorsally elevated than posterior end, entire dorsum without definite markings or pattern. Venter yellow with gray apicoventral margins. Spinnerets yellow, anterior pair more robust and longer than posterior pair. Anal tubercle not visible dorsally and separated from poster-

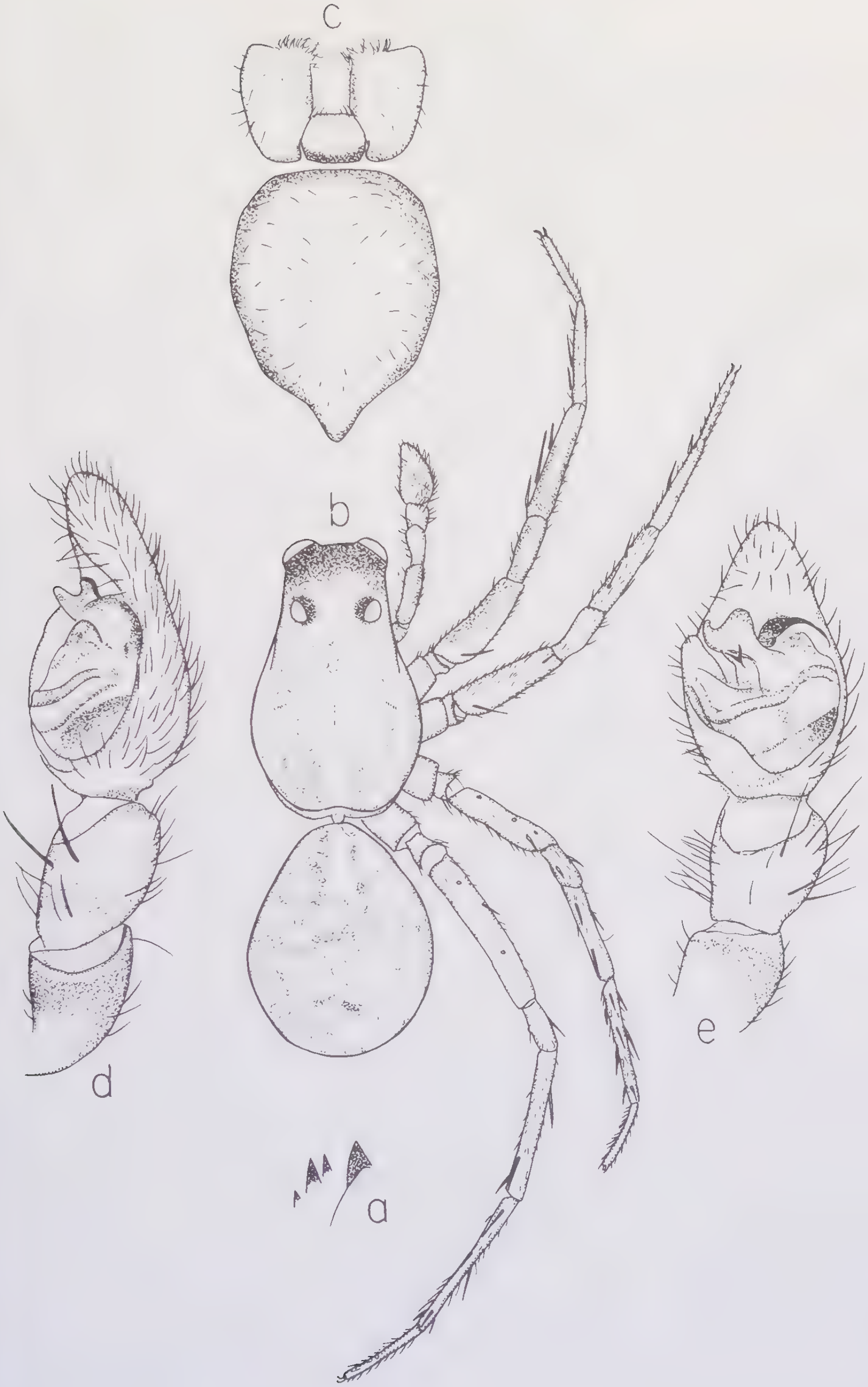


Fig. 213. Male *Artoria luwamata* n. sp., cheliceral teeth (a); habitus (b); sternum, labium, and maxillae (c); and retrolateral (d) and ventral (e) views of epigynum.

ior spinnerets by almost one diameter of the anterior pair.

Etymology: Named after the bulging PME, in Tagalog 'luwa' (bulge) + 'mata' (eyes).

Natural history: The holotype male was collected by pitfall trap set inside an upland slash-and-burn ricefield in August and a subadult female was D-Vac-collected from the same field.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 19 August 1985, A.T. Barrion, one subadult female, same data as holotype.

Distribution: Philippines.

Genus *Pirata* Sundevall

Pirata Sundevall, 1833. Nova Acta Soc. Sci. Uppsal.: 192.

Pirata spiders are common in damp or wet habitats like wetland ricefields. Some species live in moist meadows or forests but most are strongly hygrophilous and prefer margins of irrigation canals, reservoirs, ponds, rivers, and lakes. They move easily on and under the water's surface, using partly aquatic or submerged plants for footholds, or build silken tubes leading to the water from nearby plants (Bristowe 1971).

Female spiders produce small, round, thin-walled, and conspicuously white egg masses.

Members of the genus are easily separated from other lycosid genera by the small body; shiny carapace with a prominent V-shaped pattern dorsally; femur I bears one prolateral spine; male pedipalp with an enlarged prolaterally positioned subtegulum; embolus minute, similar to terminal apophysis and emanating together prolaterally; median apophysis orientated longitudinally; female epigynum simple, plain plate, with spermathecae often visible dorsally.

Pirata Sundevall has a Palearctic and Nearctic distribution, comprising a world fauna of about 60 species. *P. luzonensis* n. sp. and *P. blabakensis* n. sp. are new records in the Oriental region.

Pirata luzonensis new species

(Figs 214a–k, 215a–h)

Description:

Female (Fig. 214a–k): Total length 5.40 mm. Cephalothorax 2.70 mm long, 2.00 mm wide, 1.50 mm high. Abdomen 2.70 mm long, 1.50 mm wide, 1.45 mm high. Cephalothorax yellowish brown, with a median V-mark, reddish fovea, and broad longitudinal yellow band in the thorax posterior to fovea, submarginals entirely yellow, cephalic area with black hairs, eye margins. Eye diameter (mm): PME = 0.24, PLE = 0.18, AME = 0.15, ALE = 0.10. Eye separation (mm): AME–AME = 0.06, AME–ALE = 0.04, ALE–PME = 0.08, PME–PME = 0.13, PME–PLE = 0.20, PLE–PLE = 0.58, ALE–PLE = 0.48. Eye row length (mm): AE = PME = 0.58, PLE = 0.84. MOQ 1.76 times wider in front than behind length 1.45 times longer than anterior width (0.33 mm). Clypeus height one third AME diameter. Sternum yellow, longer (1.30 mm) than wide (1.20mm), lined with short fine brown hairs, anterior margin concave and posterior margin tapered posteriorly. Labium reddish brown, constricted laterobasally in posterior one third, yellow apex with a slight notch in the middle. Maxillae yellow, narrowed basally, and wide anteriorly, with a truncate tip and moderately converging scopulae. Chelicerae strong and vertical, promargin with two teeth and three in the retromargin. Legs yellow and slender, with moderately strongly ventral spines. Spination in femora I = 3-0-1-2, II = III = 3-0-2-2, IV = 3-0-2-1; tibiae I = 0-4(2-2-0)-0-0, II = 0-5(2-2-1)-2-0, III = 2-3(1-1-1) -2-2, ventral spines all prolaterals, IV = 2-4(1-1-2)-2-2; metatarsi I = 0-6(2-2-2)-0-0 and IV = 0-7(2-2-3)-3-3. Femur III as long as metatarsus I, metatarsus III as long as tibia II. Metatarsus I/tarsus I = 2.24. Leg formula 4123. Pedipalp as long as metatarsus IV, tibia with two long obliquely arranged prolaterobasal setae, tarsus with a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.30	0.90	2.00	1.90	0.85	7.95
2	1.95	0.85	1.60	1.65	0.80	6.85
3	1.90	0.70	1.40	1.60	0.70	6.30
4	2.60	0.90	2.40	2.65	1.00	9.55
Pedipalp	0.95	0.40	0.60	–	0.70	2.65

Abdomen brownish yellow with yellow cardiac area, numerous submarginal white spots in two longitudinal rows, pale yellow-brown transverse bands between tubercle and cardiac area. Spinnerets with a short anterior pair and a long posterior pair, almost twice longer than the anterior pair. Epigynum widely cleft posteromedially, cleft plate with numerous setae, anterior spermatheca globular with a thin duct not reaching its apex; inner portion of posterior spermathecae ovoid; posterior lateral lobe subtruncate; ratio of epigynum height (h) and width (w) = 0.83.

Male (Fig. 215a–h): Total length 5.00 mm. Cephalothorax 2.60 mm long, 1.90 mm wide, 1.40 mm high. Abdomen 2.40 mm long, 1.15 mm wide, 1.50 mm high. Cephalothorax longer than wide, pattern as in female. Eye diameter (mm): PME = 0.24, PLE = 0.15, AME = 0.15, ALE = 0.09. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.03, ALE–PME = 0.10, PME–PME = 0.14, PME–PLE = 0.18, PLE–PLE = 0.54, ALE–PLE = 0.38. Eye row length (mm): AE = 0.55, PME = 0.58, PLE = 0.80. MOQ 1.66 times wider behind than in front, length 1.17 times longer than anterior width (0.35 mm). Sternum, labium, maxillae and chelicerae similar to female except for six (three pairs) pale gray lateral spots on sternum. Legs uniformly yellow, hairy, particularly in tibiae, metatarsi, and tarsi, and with strong spines. Spination in femora I = 3-0-1-2 and IV = 3-0-2-1, tibiae I = 0-6-2-0 and IV = 2-6-2-2, metatarsi I = 0-6(2-1-1-2)-1-0 and IV = 0-7-3-3. Metatarsus I/tarsus I = 2.50. Leg formula 4123. Pedipalp shorter than femur IV; median apophysis strongly developed, with a slender process; subtegulum globose and slightly constricted subapically; ejaculatory duct 8-shaped.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	1.00	2.40	2.50	1.00	9.50
2	2.15	0.90	1.90	2.10	0.90	7.95
3	2.00	0.80	1.50	1.85	0.75	6.90
4	3.00	1.05	2.45	3.05	1.10	10.65
Pedipalp	1.00	0.45	0.60	–	0.80	2.85

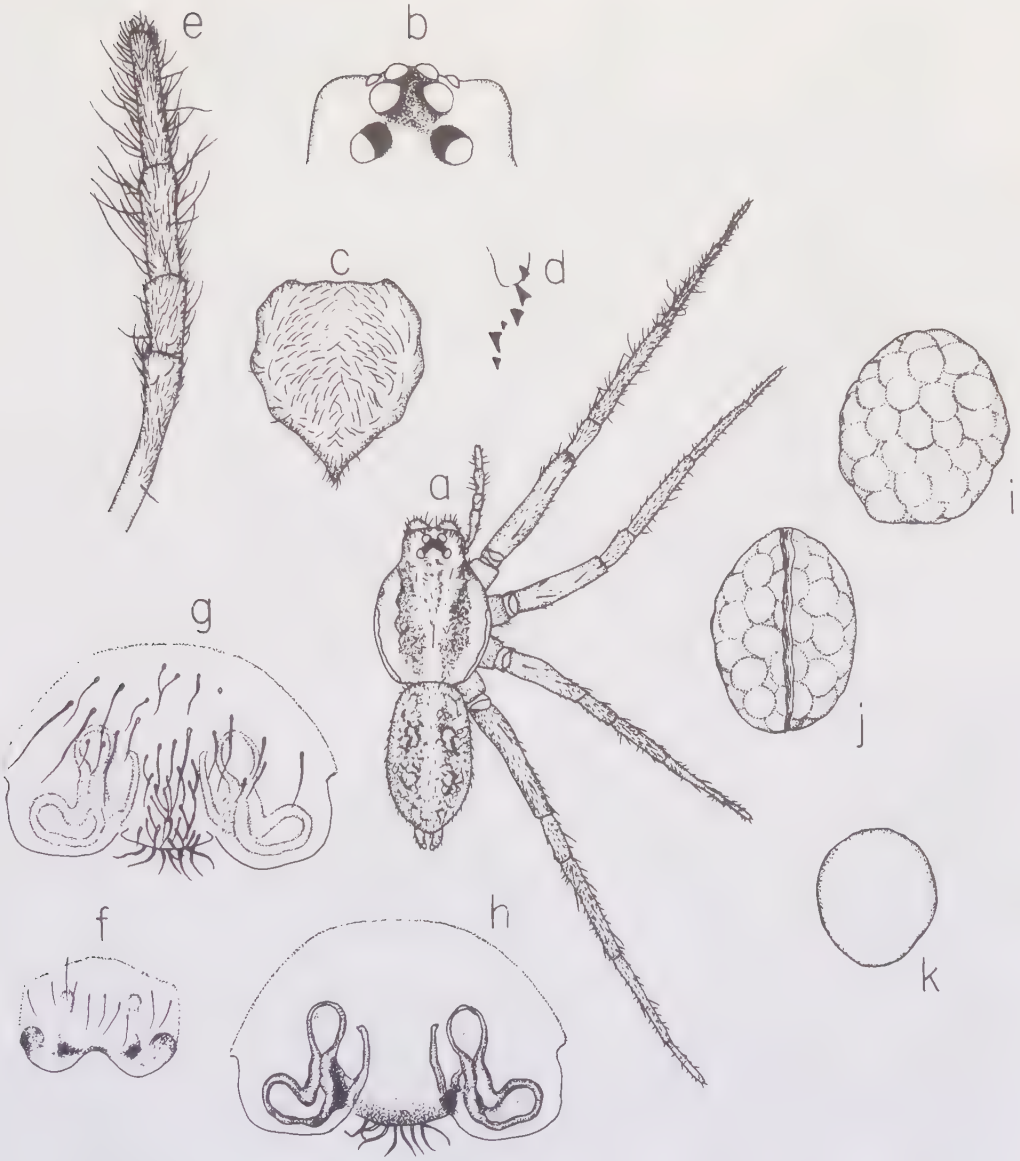


Fig. 214. Female *Pirata luzonensis* n. sp. (a); dorsal view of cephalic area (b); sternum (c); cheliceral teeth (d); pedipalp (e); uncleared (f) and cleared (g) dorsal and ventral (h) views of epigynum; dorsal (i) and lateral (j) views of egg cocoon; and close-up of egg (k).

Abdomen grayish brown to brown, with yellow mottles, mostly transverse in posterior one half. Venter uniformly yellow.

Etymology: Named after type locality.

Natural history: All the specimens were aspirated from the opened hill of rice in April, except the Pangasinan female and five males from Mt. Province.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm holotype female, 4 April 1990, M. Perez, two female and one male paratypes, 14 April 1990, A.T. Barrion; Pangasinan Prov., Bani-Bolinao, one female paratype, 16 September 1982, A.T. Barrion, Mt. Province, Bontoc, five male paratypes, 24 October 1979, A.T. Barrion.

Distribution: Philippines.

Remarks: A single female carrying a globular white egg cocoon was collected earlier in northwest Luzon, riding on a coconut husk attached to driftwood stacked inside the wetland ricefield with tidal water. The males from Mt. Province have more yellowish brown to brown abdomen with two brown spots, reddish brown legs, particularly tibiae and metatarsi, slightly gray sternal margins, and more rounded apex of subtegulum.

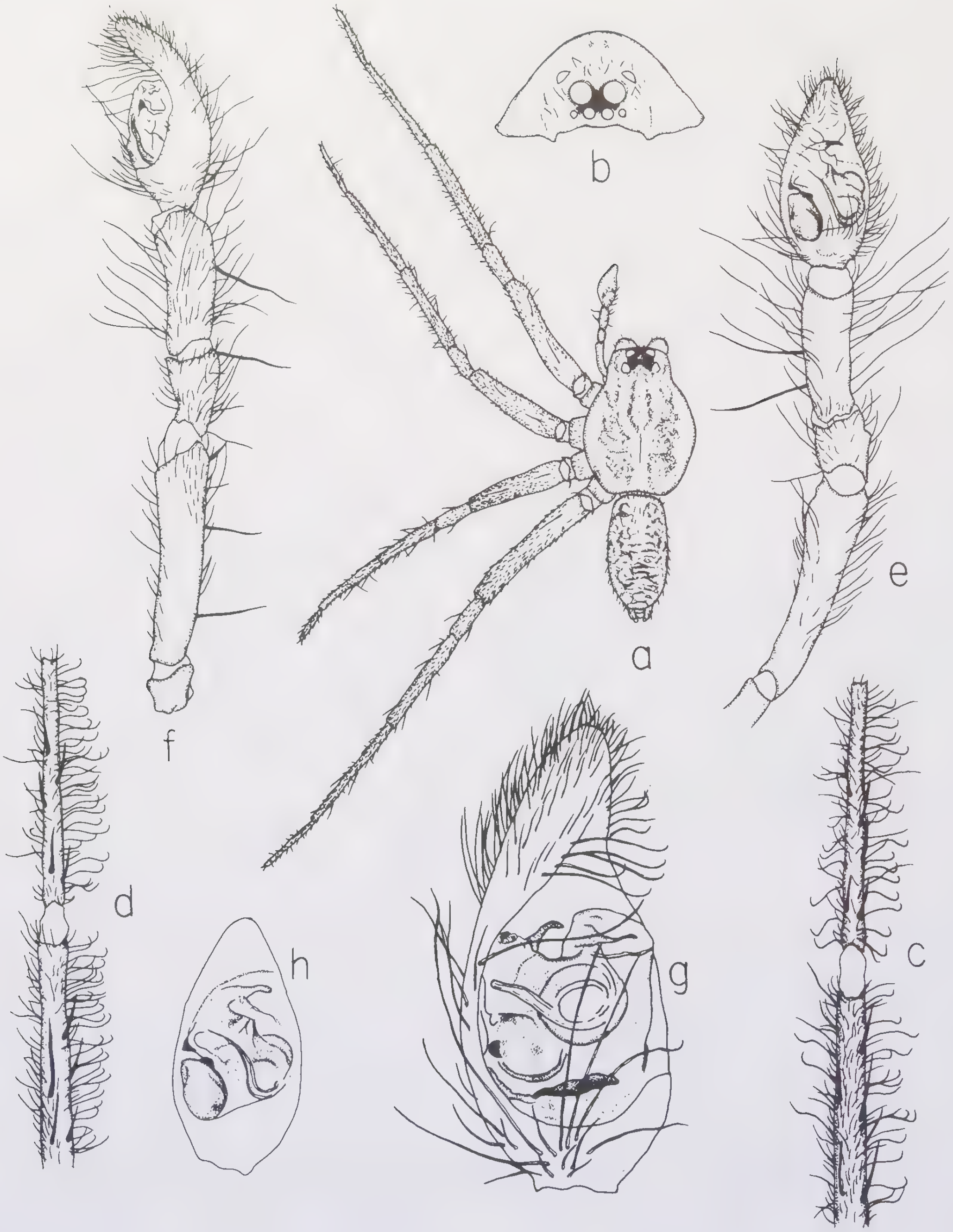


Fig. 215. Male *Pirata luzonensis* n. sp. (a); frontal view of head (b); ventral tibia and metatarsus of legs I (c) and II (d); ventral (e) and retrolateral (f) views of entire pedipalp; and ventral views of cymbium (gh).

Pirata blabakensis new species
(Figs 216a–i, 217a–h)

Description:
Female (Fig. 216a–i): Total length 6.00 mm. Cephalothorax 2.90 mm long, 2.30 mm wide, 1.95 mm high. Abdomen 3.10 mm long, 1.80 mm wide, 1.75 mm high. Cephalothorax brown with distinct V-band inside the thin yellow median band, submarginal band broad, extended to lateral margins, and black eye margins. Eye diameter (mm): PME = 0.28, PLE = 0.20, AME = 0.15, ALE = 0.10. Eye separation (mm): AME–AME = 0.09, AME–ALE = 0.05, ALE–PME = 0.06, PME–PME = 0.14, PME–PLE = 0.20, PLE–PLE = 0.54,

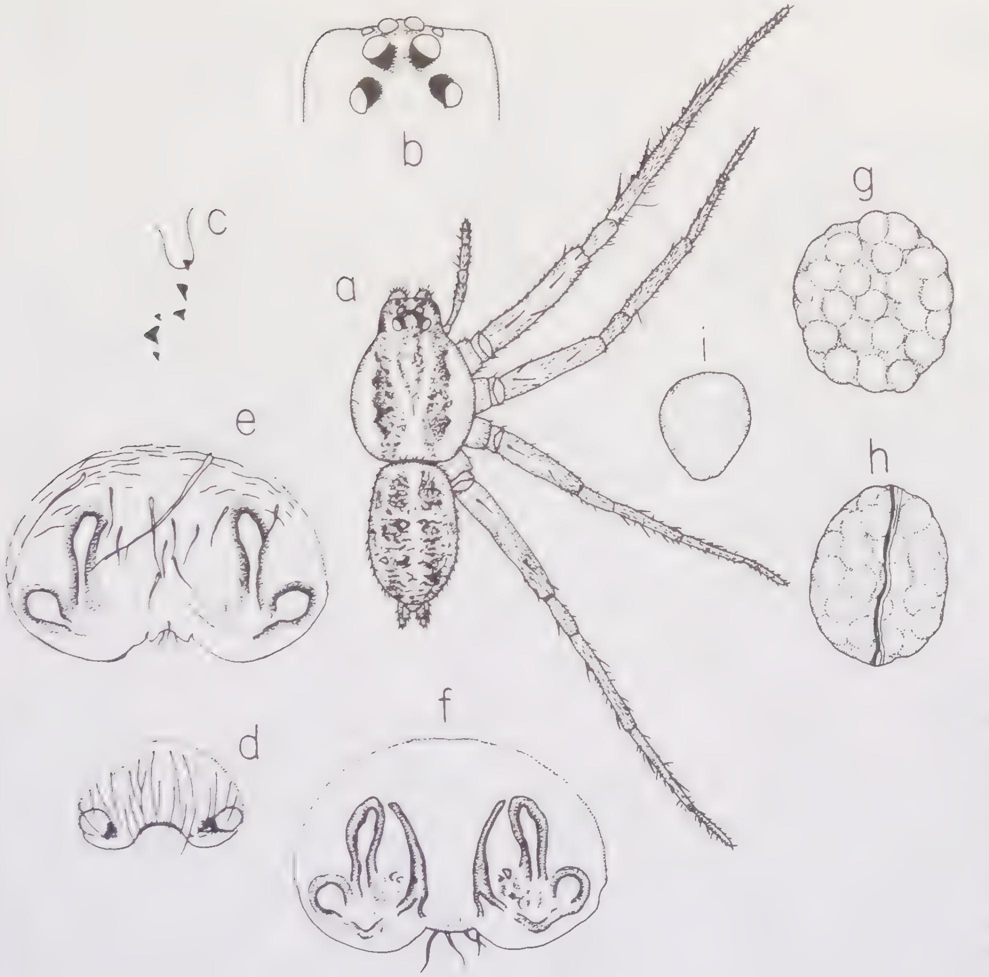


Fig. 216. Female *Pirata blabakensis* n. sp. (a); dorsal view of cephalic area (b); cheliceral teeth (c); dorsal view of uncleared (d) and cleared (e) and ventral (f) view of epigynum; dorsal (g) and lateral (h) views of egg cocoon; and close-up of egg (i).

ALE–PLE = 0.43. Eye row length (mm): AE = 0.64, PME = 0.65, PLE = 0.95. MOQ 1.7 times wider behind than in front (0.38 mm), length 1.26 times longer than anterior width. Clypeus height 0.66 AME diameter. Sternum yellow with brownish margins and hairy, except apicomedian two thirds hairless, longer than wide, and apicomedian margin slightly elevated. Labium reddish brown, as long as wide, and apically truncate. Maxillae yellow, slightly constricted at outer lateral midhalf producing globular apex. Chelicerae robust, with three teeth each in promargin and retromargin. Legs yellow, long, and slender. Spination in femora I = 3-0-1-2, II = 3-0-2-2, III = 3-0-3-2, and IV = 3-0-2-1; right tibia I = 0-4(2-2-0)-0-0 and left tibia I = 0-3(1-2-0)-0-0, tibiae II = 0-4(1-2-1)-2-0, III = 2-3(1-1-1)-2-2, and IV = 2-4(1-1-2)-2-2; metatarsi I = 0-6-0-0, II = 0-6(1-2-3)-0-0 and IV = 0-7-3-3. Metatarsus I/tarsus I = 2.31. Pedipalp as long as patella I plus tibia I, longer than any femora and metatarsus IV. Tarsus single-clawed.

Abdomen brown with numerous yellow spots, median area bears an interrupted yellow longitudinal band, posterodorsal one half with transversely concave thin yellow bands interspersed with brown. Spinnerets as in *Pirata*. Epigynum widely V-shaped posteromedially, cleft area narrow ventrally with few hairs, anterior spermathecae elongate and its tip almost reached by the diverging duct, inner portion of posterior spermathecae globular; ratio of epigynum height (h) and width (w) = 0.60.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	1.10	1.90	1.85	0.80	7.90
2	2.00	0.85	1.55	1.60	0.60	6.60
3	1.75	0.80	1.40	1.75	0.65	6.35
4	2.80	1.05	2.30	2.70	1.10	9.95
Pedipalp	1.10	0.40	0.70	–	0.80	3.00

Male (Fig. 217a–h): Total length 4.50 mm. Cephalothorax 2.40 mm long, 1.80 mm wide, 1.30 mm high. Abdomen 2.10 mm long, 1.30 mm wide, 1.25 mm high. Cephalothorax similar to female in pattern. Eye diameter (mm): PME = 0.21, PLE = 0.18, AME = 0.14, ALE = 0.10. Eye separation (mm): AME–AME = 0.05, AME–ALE = 0.03, ALE–PME = 0.08, PME–PME = PME–PLE = 0.13, PLE–PLE = 0.45, ALE–PLE = 0.35. Eye row length (mm): AE = 0.53, PME = 0.50, PLE = 0.70. MOQ 1.66 times wider behind than in front

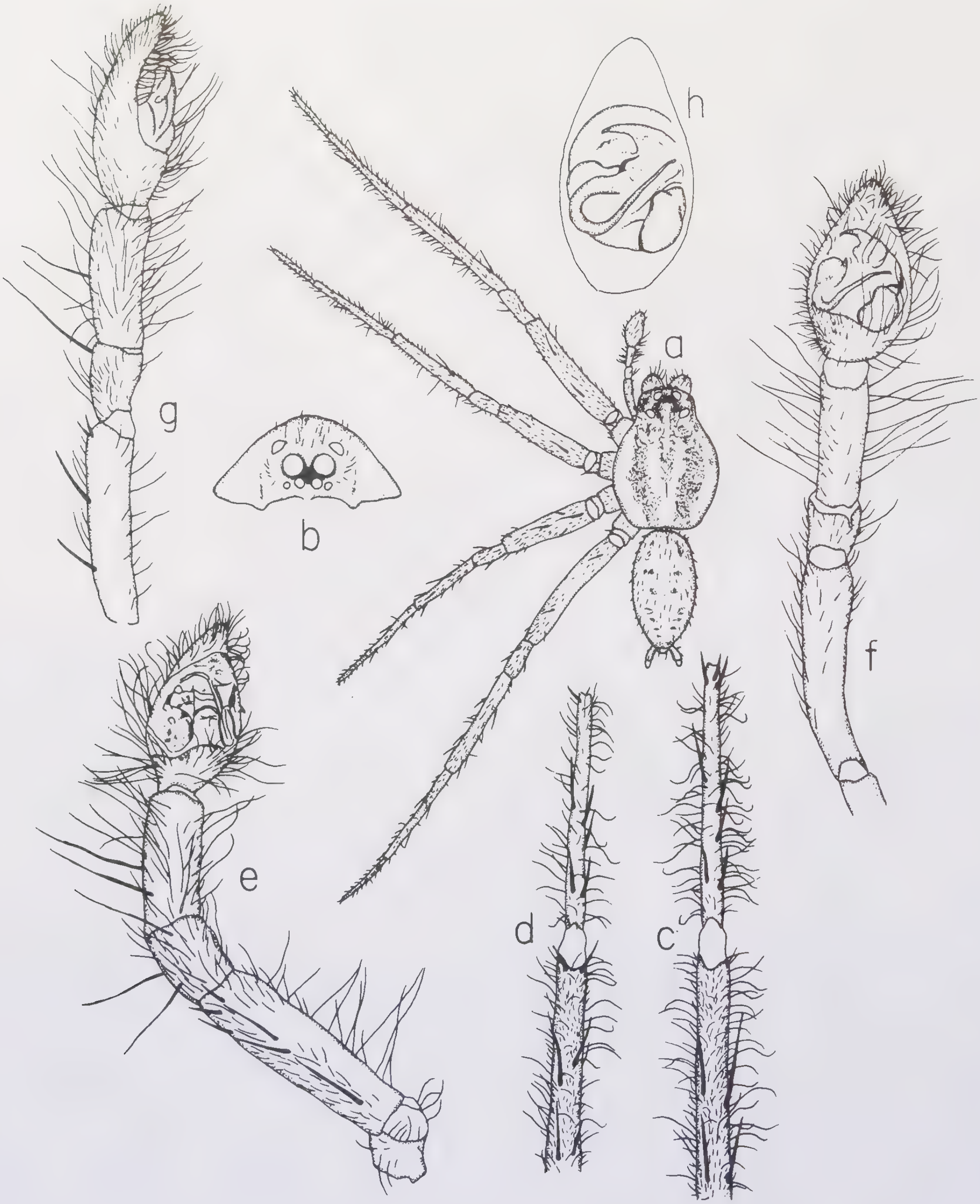


Fig. 217. Male *Pirata blabakensis* n. sp. (a); frontal view of head (b); ventral tibiae and metatarsi of legs I (c) and II (d); ventral (e), ventrolateral (f), and retrolateral (g) views of entire pedipalp; and ventral view of cymbium (h).

(0.30 mm), length 1.4 times longer than anterior width. Clypeus height 0.43 AME diameter. Sternum, labium, maxillae, and chelicerae similar to female. Legs uniformly yellow. Spination in femora I = 3-0-1-2 and IV = 3-0-3-1; tibiae I = 0-6-1-0, II = 0-6-1/2-0, and IV = 2-6-2-2; metatarsi I = 0-7-1-0 and IV = 0-7-3-3. Metatarsus I/ tarsus I = 2.25. Leg formula 4123. Pedipalp slightly longer than femur IV. Median apophysis small and triangular, projected anteriorly. Terminal apophysis shortly sickle-shaped with two nipple-like processes basally. Embolus very short. Subtegulum bears a median nipple-like process. Cymbium without an apical spine.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.20	0.75	1.85	1.80	0.80	7.40
2	1.90	0.75	1.60	1.75	0.85	6.85
3	1.60	0.50	1.25	1.60	0.70	5.65
4	2.35	0.70	2.10	2.60	0.95	8.70
Pedipalp	0.95	0.30	0.45	–	0.70	2.40

Abdomen longer than wide, yellow-brown, with submedian grayish bands, becoming transverse in posterodorsal one half. Posterior spinnerets diverging.

Etymology: Named after type locality.

Natural history: All specimens were collected inside rice hills in August.

Material examined: INDONESIA: Central Java, Yogyakarta, Magelang. Blabak, holotype female, 24 August 1989, A.T. Barrion, eight females and one male paratypes, same data as holotype.

Distribution: Indonesia.

Genus *Schizocosa* Chamberlin

Schizocosa Chamberlin, 1904. Canadian Ent. 36: 177.

Spiders of the genus *Schizocosa* are small to medium-sized lycosids (4.8–28.0 mm), having moderately high cephalothorax, with uniform height from posterior row of eyes and fovea, strongly narrowed and inclined at level of coxa I; AE row slightly procurved and shorter than PME row, AME ⩾ ALE; pale median band broad and distinct, submarginal bands similarly present, and lateral areas dark reddish brown to dark brown; sternum usually longer than wide; chelicerae with three teeth each in promargin and retromargin; legs moderately robust, long, and hairy; femora commonly with dark bands; trochanter tips bear ventral notch; spination in femur I = 3-0-2-0, distal prolateral spines near tip; tibia I = 0-6-2-2; metatarsus I = 0-7(2-2-2-1)-3-3 or 0-7(2-2-2-1)-0-0; abdomen ovate, often with two light longitudinal bands converging and extending to tip, or with chevrons and dark streaks in oblique pairs; cymbium with cluster of apical spines; palea with finger-like process distally; scale-like terminal apophysis small borne at base of intromittent part of embolus; conductor formed of larger conspicuous tegular lobe; embolus bears a short angulate intromittent part; median apophysis long, originates retrolaterodistally, with a stout mesially projected spur near base; epigynum bears a distinct hood; median septum inverted T-shaped and strong, transverse part with excavated lateral ends; copulatory openings at sides of median septum, tubes thick and angled toward midline; spermathecae globular to ovate, rugose, smooth or bear minute nodules.

The genus *Schizocosa* comprises 21 species, restricted to North America.

S. cotabatoana n. sp. is a new genus and species record in the Oriental region.

Schizocosa cotabatoana new species

(Fig. 218a–e)

Description:

Female (Fig. 218a–e): Total length 15.10 mm. Cephalothorax 7.00 mm long, 5.50 mm wide, 4.20 mm high. Abdomen 8.10 mm long, 5.20 mm wide, 4.70 mm high. Cephalothorax red-brown with a dagger-like yellow median longitudinal band, blade end contains the black fovea and knob-like handle bears a pair of ovoid yellow-brown spots, eye margins black forming a U-band in the ocular area. Eye diameter (mm): PME = 0.56, PLE = 0.38, AME = 0.28, ALE = 0.20. Eye separation (mm): AME–AME = 0.15, AME–ALE = 0.11, ALE–PME = 0.20, PME–PME = 0.38, PME–PLE = 0.58, PLE–PLE = 1.28, ALE–PLE = 1.20. MOQ twice wider behind than in front (0.78 mm), length 1.45 times longer than anterior width. Clypeus height less than one AME diameter, 1.15 times ALE diameter. Sternum brown, with black hairs, posterior one half darker in color and more hirsute, longer (3.00 mm) than wide (2.35 mm); anteriorly straight and posteriorly tapered in front of coxa IV. Labium reddish brown, with a yellow anterior end, slightly notched in the middle, slightly wider (1.00 mm) than long (0.90 mm). Maxillae reddish brown with yellow inner apical one third at base of brownish yellow scopulae, outer laterals without cavity. Chelicerae dark reddish brown, robust basally, and frontally hirsute. Promargin and retromargin notches with three teeth each, midtooth of promargin the largest and uniform in size in the retromargin. Boss distinctly developed. Legs long and robust, brownish yellow with gray patches in femur, venter of coxae gray with a yellow subbasal spot, scopulae in venter of tibiae, metatarsi and tarsi. Spination in femora I = 3-0-2-3 (right) and 3-0-2-2 (left), a pair of distal prolateral spines present, III = 3-0-2-3; tibiae I = 0-6(2-2-2)-1-0 and IV = 0-7(2-2-2-1)-3-3; metatarsi I = 0-5(2-2-1)-0-0 and III = 0-7(2-2-2-1)-3-3. Dorsum of tibiae, metatarsi and tarsi with fine long hairs and trichobothria. Tarsi three-clawed, each superior claw with five teeth and none in inferior claw. Leg formula 4123. Pedipalp as long as combined length of tibia I and metatarsus I, tarsus bears a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.00	2.60	4.00	3.50	2.40	17.50
2	4.70	2.65	3.90	3.60	2.35	17.20
3	4.40	2.20	3.35	4.00	2.25	16.20
4	5.60	2.55	4.65	6.20	3.10	22.10
Pedipalp	2.50	1.40	1.50	–	2.10	7.50

Abdomen brown with yellow mottles and an inverted V-shaped yellow band in cardiac area, entire dorsum with yellow-brown hairs, 1.6 times longer than broad, and widest in posterior one third. Epigynum with median piece longer (0.50 mm) than wide (0.43 mm), moderately enlarged at midhalf, and with a cavity on each side of the transverse part, a/b = 0.86; hood present, approximately as long as wide; spermathecae

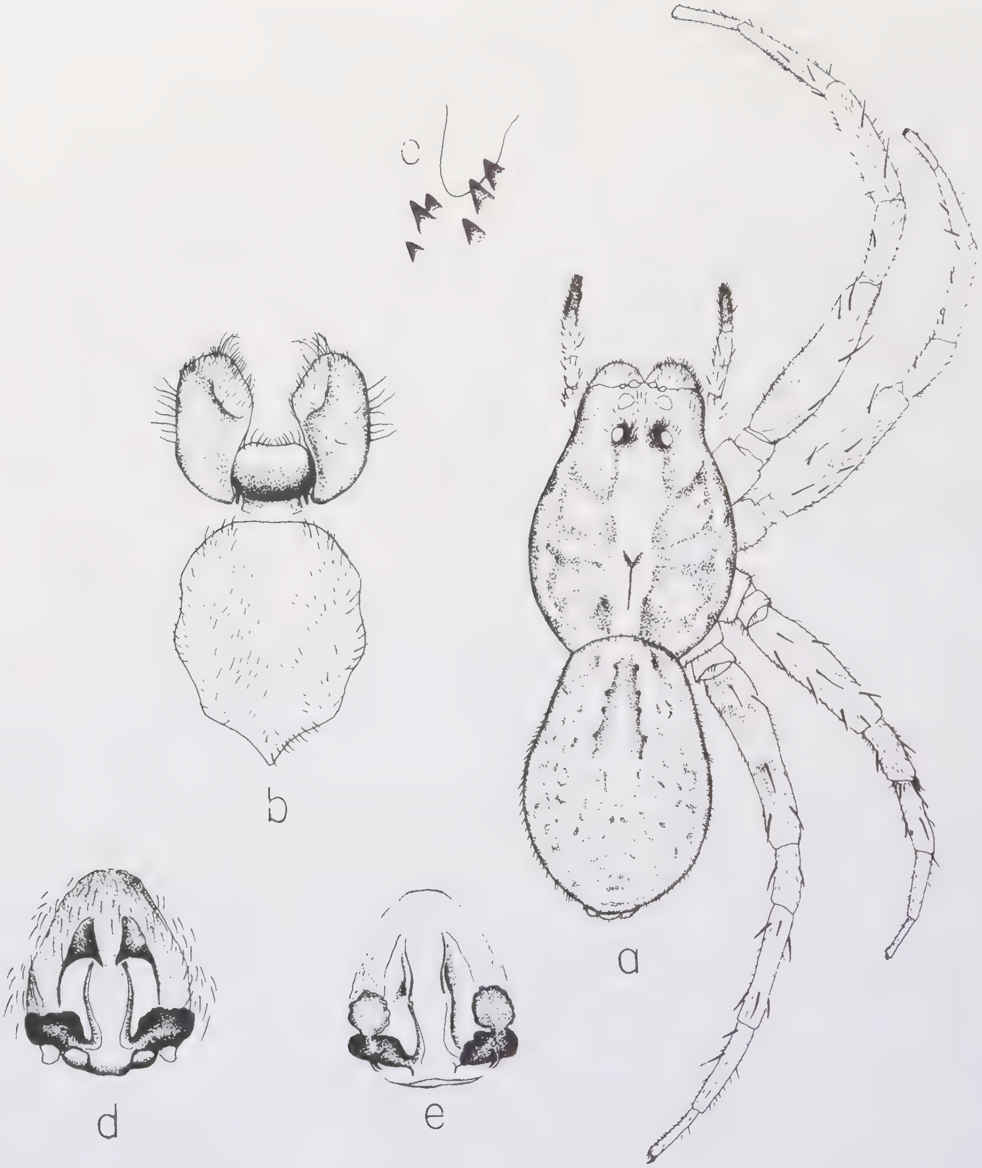


Fig. 218. Female *Schizocosa cotabatoana* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and dorsal (d) and ventral (e) views of epigynum.

globular, parallel to each other, and bearing rough structures.

Etymology: Named after the type locality.

Natural history: The holotype female was collected from pitfall trap set in a soybean field planted in March after rice.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Koronadal, Uṇo Vill., holotype female, 3 March 1983, A. Alviola III.

Distribution: Philippines.

Genus *Arctosa* C.L. Koch

Arctosa C.L. Koch, 1847. Die Arachniden 14(3): 94.

The genus *Arctosa* consists of medium-sized wolf spiders with relatively powerful eyesight and moderately swift runners. Some members of the genus have strong ability to return to their habitat when carried some distance away on a nearby body of water. The general characters of *Arctosa* are the rather low broad carapace, uniform in height from fovea to posterior row of eyes, often glabrous yellow to reddish brown or mottled with gray and tawny brown; AE row straight to slightly recurved or procurved, longer to shorter than or as long as PME row; chelicerae with two or three promarginal and three retromarginal teeth; pale legs, usually robust, with dark rings, and sparse scopulae; femur I bears two or three dorsal spines and one or two prolaterals; tibiae I with zero or one dorsal spine, two prolaterals, zero to two retrolaterals, and III with two dorsal spines or with one plus a bristle; metatarsus I with no spine, zero to three prolaterals; trochanters usually deeply notched apicoventrally; abdomen pale and mottled, similar to cara-

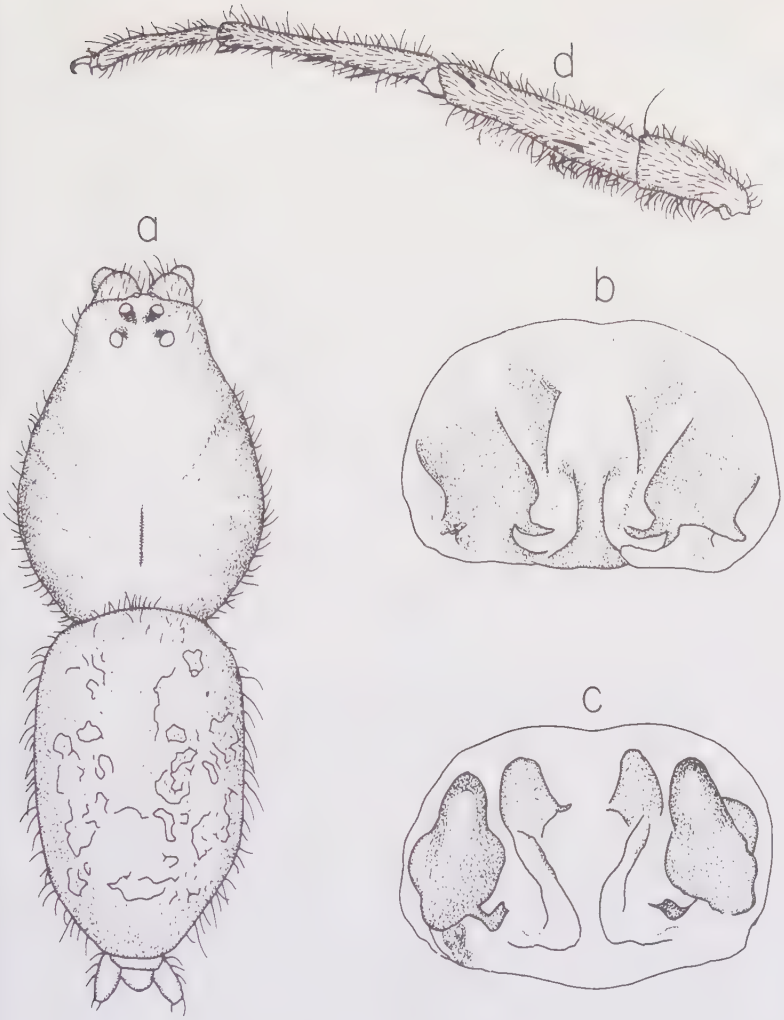


Fig. 219. Female *Arctosa tanakai* n. sp. (a); dorsal (b) and ventral (c) views of epigynum; and prolateral view of tibia I and metatarsus I (d).

pace, and clothed with short setae; terminal apophysis conspicuous, in two parts; embolus relatively short, straight or curved, largely covered by median apophysis in ventral view; prominent median apophysis, elongate and well sclerotized; conductor formed mainly of small tegular lobe; epigynum lacks distinct hood; conspicuous atrium divided by median septum; copulatory openings located at sides of slender part of median septum; copulatory tubes stout to slender, often sinuous or curved; and spermathecae bulbous, smooth, or with few prominences.

Worldwide the genus comprises 50 species. *Arctosa tanakai* n. sp. is a new genus and species record for the Philippines.

Arctosa tanakai new species

(Figs 219a–d, 220ab, 221a–j)

Arctosa janetscheki Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 27.

Description:

Female (Figs 219a–d, 220ab): Total length 6.40 mm. Cephalothorax dark reddish brown, with black margins and eye area, clothed with short fine hairs and erect to moderately curved brown hairs. Eye diameter (mm): PME = 0.23, PLE = 0.20, AME = 0.13, ALE = 0.10. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.05, ALE–PME = 0.06, PME–PME = 0.19, PME–PLE = 0.20, PLE–PLE = 0.50, ALE–PLE = 0.48. Eye row length (mm): AE = 0.54, PME = 0.58, PLE = 0.90. MOQ 1.93 times wider behind than in front (0.30 mm), length 1.43 times longer than anterior width. Clypeus height small, 0.62 of AME diameter. Sternum reddish brown, longer (1.40 mm) than wide (1.20 mm), truncate anteriorly, and shortly tapering posteriorly between coxae IV. Labium dark red, as long as wide, mid-anterior deeply notched. Maxillae lighter than labium in coloration, yellowish brown in the slightly converging apical one fourth. Chelicerae dark red, promargin with a large apical and a small basal teeth, and retromargin has three small teeth. Legs moderately robust, yellowish

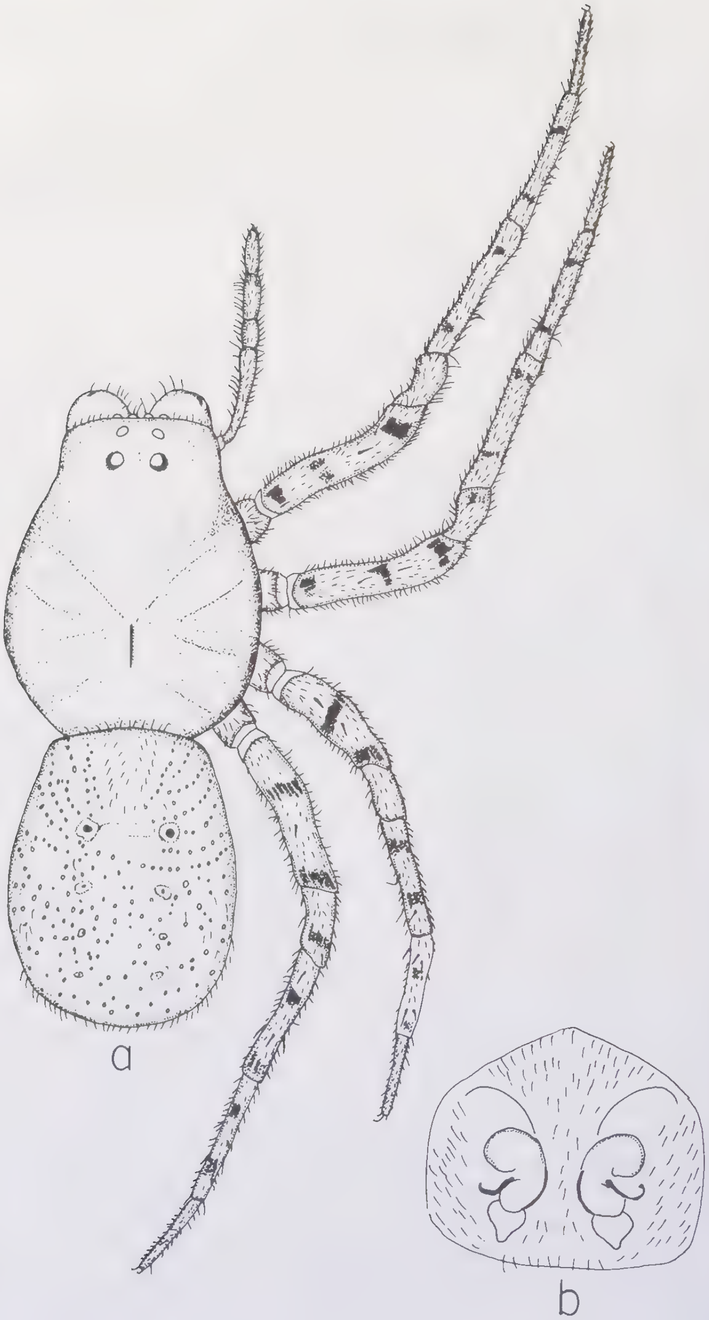


Fig. 220. Paratype female *Arctosa tanakai* n. sp. (a) with more abdominal spots; and epigynum (b).

brown with gray tinges or bands, noticeably in femora, hirsute, and bearing minimal spines in tibia I. Spination in femora I = 2-0-1-0 and II = IV = 2-0-0-0; tibiae I = II = 0-2-1-0 and IV = 1-4(1-1-2)-2-2; metatarsi I = 0-5-0-0, II = 0-5-2-1, and IV = 0-7-3-3. Single prolateral tibial spine of leg I in basal one third. Femora II and III subequal and slightly longer than tibia I. Metatarsus I/tarsus I = 1.67. Tarsi three-clawed, each superior claw with five teeth in leg I. Leg formula 4123. Pedipalp light reddish brown, almost as long as combined length of femur I and patella I, and tarsus with a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.10	1.05	1.70	1.50	0.90	7.25
2	1.80	0.95	1.50	1.40	0.80	6.45
3	1.80	0.80	1.25	1.50	0.85	6.20
4	2.50	1.10	1.90	2.50	1.20	9.20
Pedipalp	1.15	0.55	0.65	–	0.75	3.10

Abdomen subglobular shorter than carapace length, brownish gray, with numerous yellow mottles, and two pairs of globular brown spots dorsally. Laterals with

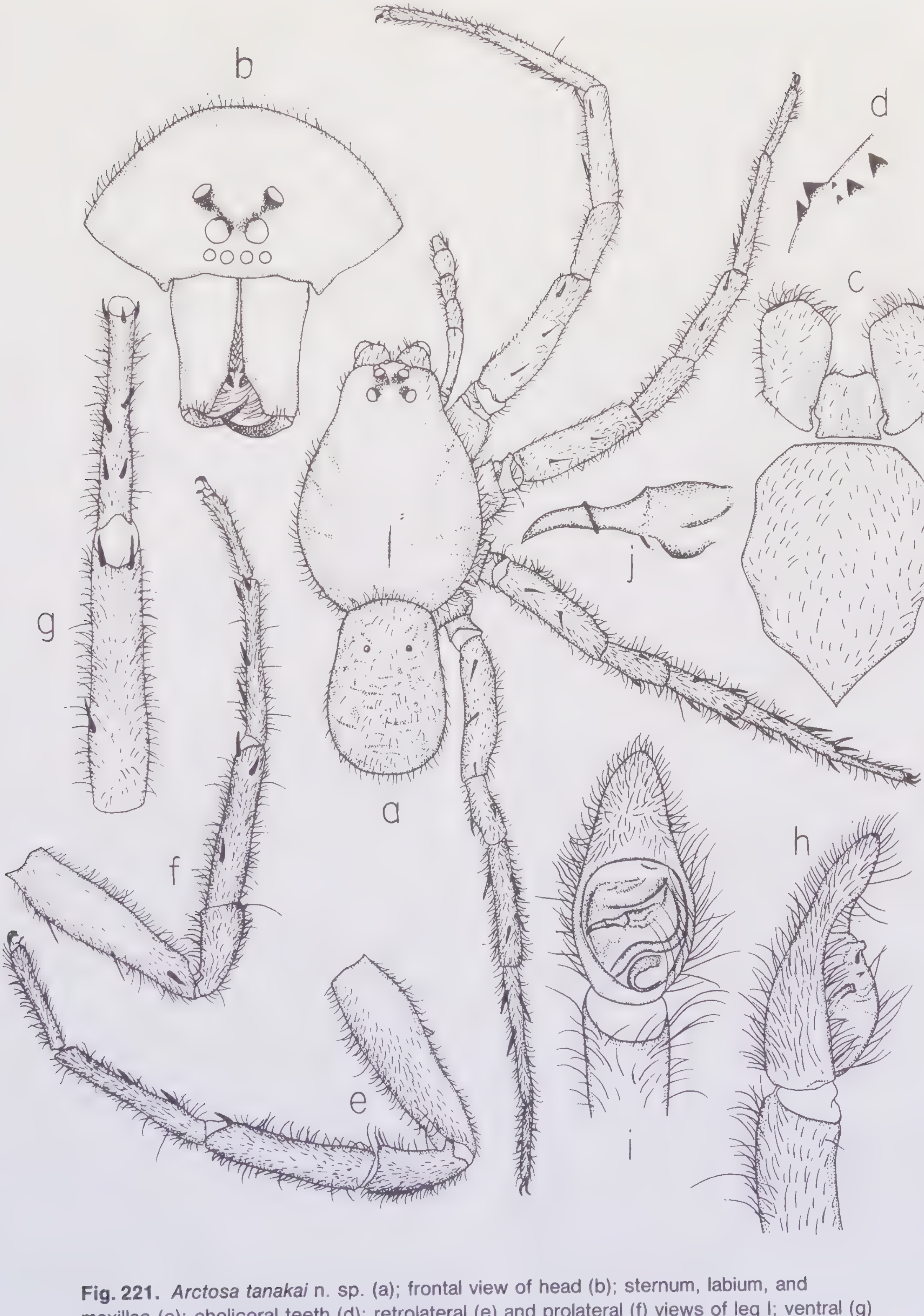


Fig. 221. *Arctosa tanakai* n. sp. (a); frontal view of head (b); sternum, labium, and maxillae (c); cheliceral teeth (d); retrolateral (e) and prolateral (f) views of leg I; ventral (g) view of tibia I and metatarsus I; retrolateral (h) and ventral (i) views of pedipalp; and median apophysis (j).

yellow interrupted longitudinal bands. Venter yellow-brown, with at least seven transversely straight to recurved yellow bands with brown dots. Spinnerets not visible dorsally, short, and with converging apices. Epigynum bears a back-to-back C-shaped median septum, Y-shaped at both ends, broad along posterior epigynal margins, and with a tapered triangular-like sclerotization from lateral margin, pointed towards median septum. Spermathecae globular, with short copulatory tubes and a spherical structure within the triangular-like process posterior to each spermatheca.

Male (Fig. 221a–j): Total length 5.70 mm. Cephalothorax 3.40 mm long, 2.70 mm wide, 2.00 mm high. Abdomen 2.30 mm long, 1.80 mm wide, 1.65 mm high. Similar to female except for lighter coloration. Eye diameter (mm): PME = 0.23, PLE = 0.20, AME = 0.11, ALE = 0.10. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.05, ALE–PME = 0.08, PME–PME = 0.18, PME–PLE = 0.23, PLE–PLE = 0.55, ALE–PLE = 0.49. Eye row length (mm): AE = 0.63, PME = 0.64, PLE = 0.88. MOQ prominently wider behind than in front, anterior width much shorter than height. Clypeus height small, as long as ALE, slightly shorter than one AME diameter. Sternum robust, maxillae and chelicerae similar to female, except for a more yellow coloration. Apex of labium with a transverse yellow band, cleft medially, and outer lateral basal one third constricted. Maxillae more converging towards apices. Legs yellow, with minimal to no gray bands in femora. Spination in femora I = 2-0-1-0, II = 2-0-0-0, III = IV = 3-0-0-0; tibiae I = 0-3(1-2)-1-0 and IV = 1-4(1-1-2)-2-2; metatarsi I = 0-5(2-2-1)-1-1 and IV = 0-7(2-2-3)-3-3. Metatarsus I/tarsus I = 1.71. Leg formula 4123. Pedipalp longer than any of the femora, hairy except dorsum of femur. Median apophysis with a ridge prior to apex, producing two cavities. Conductor, embolus, and terminal apophysis form a V-shaped or forcep-like process. Cymbium without apical spine but with hairs.

Length of leg and pedipalp segment (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	1.10	1.80	1.80	1.05	8.00
2	2.00	1.00	1.60	1.65	0.90	7.15
3	1.80	0.95	1.25	1.80	0.85	6.65
4	2.30	1.20	2.10	2.60	1.30	9.50
Pedipalp	1.10	0.45	0.50	–	0.85	2.90

Abdomen longer than wide, yellowish brown, with numerous gray-brown mottles, bears two pairs of spherical brown spots in dorsoapical one third. Apical one half with broader gray-brown mottles, becoming transverse in posterior one half. Spinnerets and venter as in female.

Etymology: Dedicated to Dr H. Tanaka, the lycosid expert from Japan.

Natural history: The holotype female was collected from ricefield in November and the paratypes from ricefields and rice levees from February to May. Some specimens were collected from cowpea fields in October.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, holotype female, 20 November 1978, A.T. Barrion; paratypes – five females and one male, same data as holotype; ten females, two males, two subadult males, and 81 spiderlings, same locality as holotype, 18 February 1989, M. Perez; Victoria, Masapang Vill., four females, two subadult males, and one spiderling, 10 September 1980, C. de Castro; Pangasinan Prov., Manaoag, Pao Vill., three females and one male, 16 February 1981, J. Bandong; *Panay Is.*, Iloilo Prov., Oton, Rizal Vill., three females and three males, 21 October 1982, A.T. Barrion.

Distribution: Philippines.

Remarks: One of the female paratypes was caught preying on *Scirpophaga innotata* (Walker) moth.

Genus *Trochosa* C.L. Koch

Trochosa C.L. Koch, 1848. Die Arachniden: 95.
Trochosina Simon, 1885. Bull. Soc. Zool. 10: 10.
Varacosa Chamberlin and Ivie, 1942. Bull. Univ. Utah 32(13): 36.
Allotrochosina Roewer, 1954. Katalog des Araneae von 1758 bis 1940: 213.
Diahogna Roewer, 1954. Katalog des Araneae von 1758 biss 1940: 239.
Trochosoma Roewer, 1954. Katalog des Araneae von 1758 bis 1940: 304.

The wolf spiders of the genus *Trochosa* C.L. Koch are moderately large lycosids, common in small hollows under stones or in the small cracks and crevices in bunds or levees in the field. The genus, comprising 60 species, is widely distributed in the world, and members of the genus have a pair of longitudinal bars on carapace; moderately low head; AE row straight or slightly procurved and as long as or shorter than PME row; AME distinctly larger than ALE; clypeus height less than one AME diameter; chelicerae with two or three retromarginal teeth; female fang without excrescence; femur I with two spines prolaterodistally; dorsal base of tarsus I without trichobothrium; palp with one claw or none in males. The males are easily distinguished by the presence or absence of palpal claw, sickle-shaped terminal apophysis, cheliceral excrescence, and usually the differently colored tarsus I. Female epigynum has marginal line on the genital openings and an inverted T-shaped median septum.

Two new species *Trochosa*, *T. alviola* and *T. canapii*, are new records for the Philippines.

Trochosa alviolai new species

(Fig. 222a–h)

Description:

Female: Total length 13.50 mm. Cephalothorax 6.00 mm long, 4.66 mm wide, 2.11 mm high. Abdomen 7.50 mm long, 4.25 mm wide, 3.75 mm high. Cephalothorax brown, with a light median band, black fovea, on the

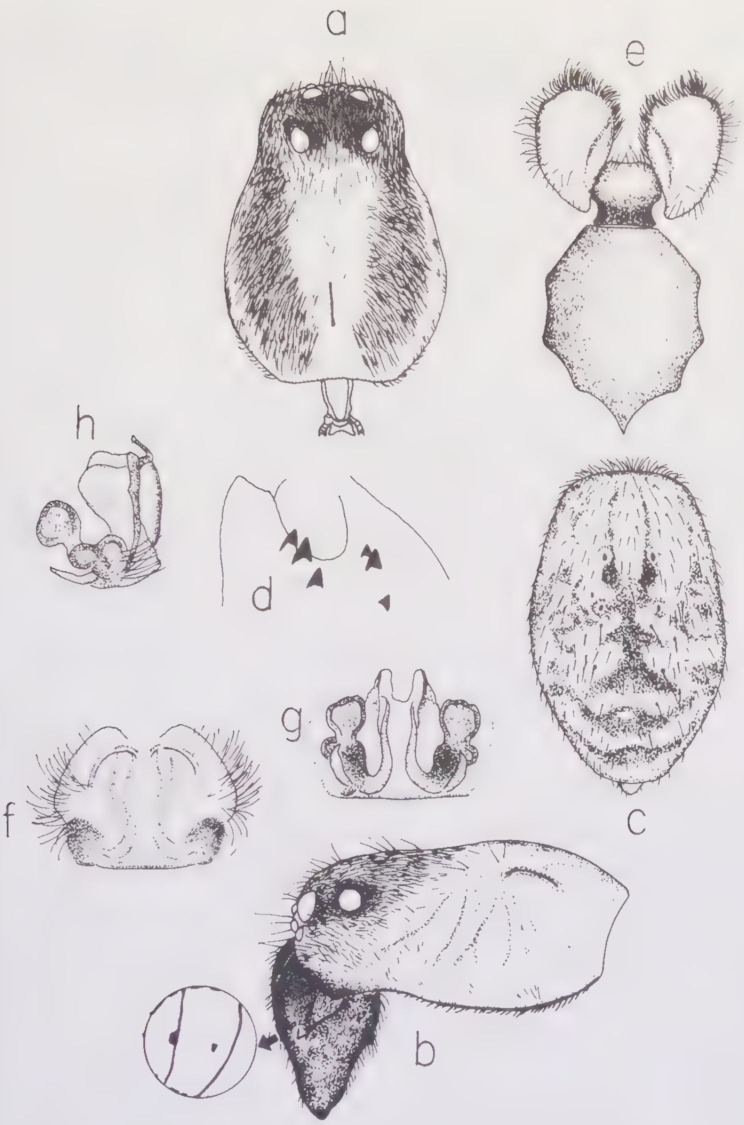


Fig. 222. Female *Trochosa alviolai* n. sp., dorsal (a) and lateral (b) views of cephalothorax; dorsum of abdomen (c); cheliceral teeth (d); sternum, labium, and maxillae (e); dorsal (f) and ventral (g) views of epigynum; and left spermatheca in ventral view (h).

basal one third, and eye margins, four or five grayish bands converging towards fovea, laterals and carapace margins clothed with white hairs, head almost flat, and posterior end of thoracic area truncated. Ocular area clothed with white and long brown hairs. Eye diameter (mm): PLE = 0.60, PME = 0.48, AME = 0.25, ALE = 0.18. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.08, ALE–PME = 0.19, PME–PME = 0.33, PME–PLE = 0.40, PLE–PLE = 1.00, ALE–PLE = 0.96. MOQ 2.3 times wider behind than in front (0.60 mm), length 1.6 times longer than anterior width. Clypeus height 0.44 AME diameter. Chelicerae reddish brown, each with three retromarginal and promarginal teeth. Left chelicera bears a short midlateral and a rounded midventral teeth. Sternum slightly longer (2.60 mm) than broad (2.00 mm), dense hairs, truncated apically and pointed posteriorly, apical portion wider than base of labium, margins facing coxae II, III, and IV lightly indented. Labium reddish brown, apical margins yellow, indented medially, constricted in the basal one third, height beyond one half of maxillae. Legs brown, mottled with gray spots, tarsi with scopulae, spination in femora I = 3-0-2-3 and IV = 3-0-2-1; tibiae I = 0-6(2-2-2)-1-0 and IV = 2-6-2-2; metatarsi I = 0-5(2-2-1) -1-1 and IV = 0-8(1-1-1-1-1-3)-3-3. Tarsi three-clawed with five to eight teeth in each superior claw. Leg formula 1324. Pedipalps brown except yellow basal one half of femora, venter of femur with 20 brown long hairs, arranged partly in two rows, tibiae and tarsi each with one dorsal and two prolateral spines, tarsus single-clawed with three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.83	2.33	3.83	5.08	2.83	18.90
2	4.00	1.93	3.33	3.00	2.16	14.42
3	3.90	2.41	3.41	3.08	2.33	15.13
4	3.50	1.83	2.58	3.16	2.00	13.07
Pedipalp	2.20	1.00	1.35	–	1.85	6.40

Abdomen long, grayish brown and mottled yellow, with an inverted pale U-shaped band around cardiac area, and two pairs of brown spots at midhalf. Venter yellow with some gray patches. Spinnerets yellow, clothed with brown hairs, all subequal in size. Epigynum with a divided anterior epigynal margin (AEM), median piece wide in apical one half and U-shaped ventrally, b/St = 0.20, b/a = 2.85, x/z = 0.91, y/z = 0.20 (a = width of median septum at constricted point, b = width of median septum, St = sternum breadth at coxa II, x = width of epigynum, y = distance between hood of epigynum and anterior epigynal margin, z = height of epigynum).

Etymology: The new species is named after the late Mr Abraham (Abe) Alviola III.

Natural history: A holotype female was pitfall trap-collected from a soybean field planted after rice in March.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Koronadal, holotype female, 3 March 1983, A. Alviola III.

Trochosa canapii new species
(Fig. 223a–e)

Description:

Female: Total length 15.08 mm. Cephalothorax 7.08 mm long, 5.00 mm wide, 2.08 mm high. Abdomen 8.00 mm long, 4.83 mm wide, 3.60 mm high. Cephalothorax brown with a rather broad yellow median band, cephalic area yellow except eye margin, subdorsal area reddish brown with three or four striae directed towards black fovea and a band of white hairs below it, two shallow pits above fovea, posterior end of cephalothorax slightly recurved. Eight eyes in three rows, eye lengths: PLE > PME > AE. Eye diameters (mm): PME = 0.54, PLE = 0.44, AME = 0.28, ALE = 0.18. AME–AME separation three fourths AME diameter. AME–ALE separation nearly one half ALE diameter. PME–PME separation one PLE diameter. PLE–PLE separation 2.5 times PLE diameter. Clypeus height one ALE diameter. Chelicerae dark reddish brown, 2.2 times longer than broad, bear three teeth each in promargin and three in retromargin. Sternum broader (2.84 mm) and longer (2.28 mm) than *T. alviolai*, with few hairs along its yellow apical median one half, margins along coxae II–III–IV markedly indented, apical margin shorter than basal width of dark reddish brown labium, posterior end pointed. Labium slightly notched apically, constricted at basal one third, height just over one half of maxillae. Maxillae longer than wide, distal ends much broader than posterior, apical one third yellow below scopulae. Legs yellowish brown with light gray patches. Spination in femora I = II = 3-0-2-2, prolateral distal spines in a pair in I, III = 3-0-2-3, IV = 3-0-2-2; tibiae I = 0-6(2-2-2)-1-0, II = 0-6(2-2-2)-2-0, III = IV = 2-6(2-2-2)-2-2. Metatarsi and tarsi with scopulae. Metatarsus I/tarsus I = 1.46. Tarsi three-clawed with six or seven teeth in each superior claw. Leg formula 4123. Labial palp same color as legs, total length almost as long as combined length of femur II and patella II. Spination in tibia = 1-0-1-0 and tarsus = 1-0-2-1, single-clawed with five teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.88	2.66	4.00	3.66	2.50	17.70
2	4.38	2.50	3.50	3.50	2.88	16.76
3	3.72	2.22	3.16	3.66	2.72	15.48
4	5.27	2.50	4.44	6.27	3.00	21.48
Pedipalp	2.20	1.00	1.50	–	2.10	6.80

Abdomen elongated, dark brown except the yellow U-shaped band around cardiac area, broadest in the basal one third, venter yellow with brown hairs. Spinnerets subequal in size and length. Epigynum very close to *T. alviolai* except for the nearly parallel-sided median piece, high anterior epigynal margin, and a pair of brown spots dorsad of AEM, x/z = 0.95, y/z = 0.42, b/a = 2.44.

Etymology: Named after Mr Bernard Canapi for his efforts in collecting many spiders from his province.

Natural history: The holotype female spider was D-Vac collected in July from dry-seeded rainfed wetland rice with an adult whitebacked planthopper, *Sogatella furcifera* (Horvath), male, between the maxillae and chelicerae.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Bauan Vill., holotype female, 22 July 1980, B. Canapi.

Distribution: Philippines.

Genus *Pardosa* C.L. Koch

Pardosa C.L. Koch, 1848. Die Arachniden 14: 100.
Lycosa Dahl, 1908. Halle. Nova Acta Leop. 88: 371.

Pardosa is one of the largest wolf spider genera with an estimated 450 species scattered worldwide. Members of the genus are small to medium-sized lycosids, with rather high and narrow carapace, vertical anterolaterally, convex in the eye area, and commonly dark with pale median and submedian bands; usually procurved AE row distinctly shorter than PME row; AME longer than wide, pale or dark; legs moderately long, slender, pale or dark; scopulae sparse; femur I bears three dorsal and two prolateral spines, prolateral spines close to each other distally; tibia with two dorsal bristles, one or two prolateral, one or two retrolateral and six ventral spines; metatarsus I has a dorsal bristle, two or three prolateral, and two or three retrolateral, and seven ventral spines. Cymbium of male pedipalp has one to three short stout spines apically, terminal apophysis tooth-like, borne on the retrolaterodistal or retrolaterobasal of palea, projected towards tip of embolus and conductor; embolus long to short, angled or straight, with tip on apex of

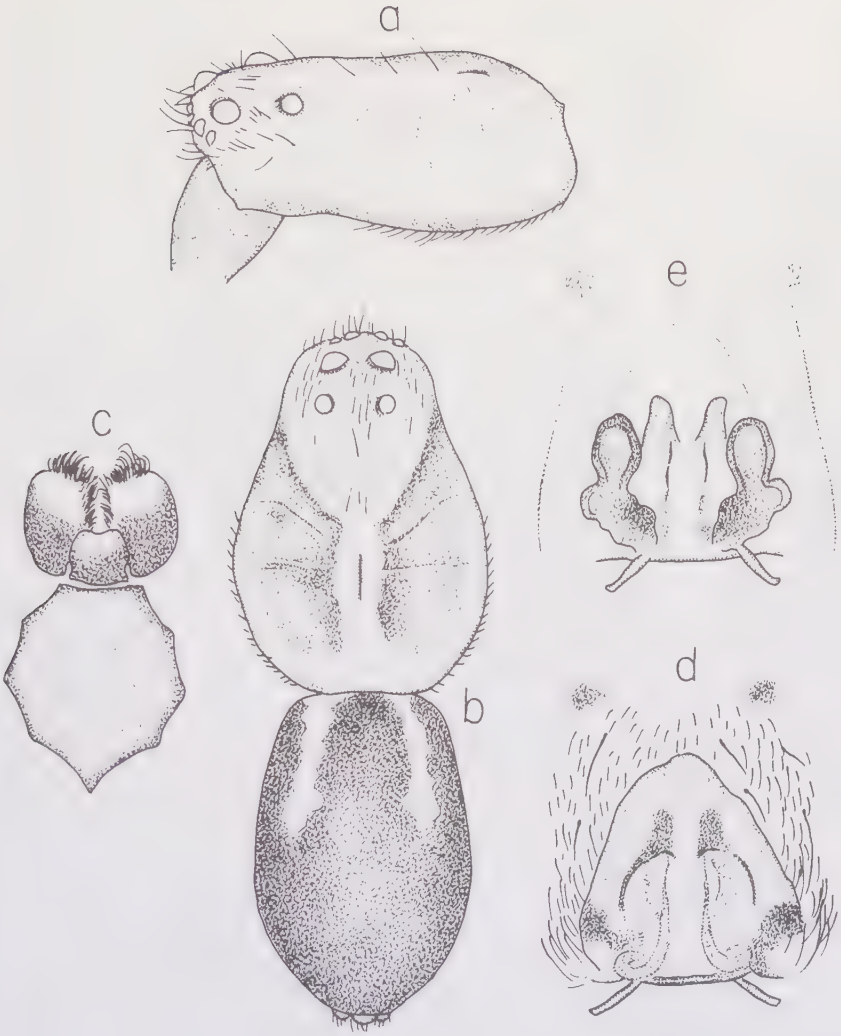


Fig. 223. Female *Trochosa canapii* n. sp., lateral view of cephalothorax (a); habitus (b); sternum, labium, maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

conductor or canal along distal margin of tegulum; conductor shaft-like, reaching basal margin of palea to retrolateral border of genital bulb; median apophysis with short strong basal process and variable distal process; epigynum with distinct hoods; hoods with one or two paired cavities; broad and deep atrium; variable median septum; copulatory openings usually laterad of median septum; copulatory tubes variable, sometimes strongly arched with well-separated globular spermathecae, often with nodules; abdomen generally ovate, dark to pale in color, with venter showing shades of reddish brown, yellowish brown, or gray-brown.

All but *P. pseudoannulata* (Boesenberg and Strand) are new species records for the Philippines.

***Pardosa pseudoannulata* (Boesenberg and Strand)**
(Figs 224a–k, 225a–e)

Tarantula pseudoannulata Boesenberg and Strand, 1906. Abh. Senckenbg. Ges. 30(1–2): 319.

Lycosa pseudoannulata Fox, 1935. J. Wash. Aca. Sci. 25(10): 455.

Pardosa pseudoannulata Yaginuma, 1986. Spiders of Japan in Color (new ed.): 126.

Redescription

Female (Fig. 224a–k): Total length 9.95 mm. Cephalothorax 4.75 mm long, 4.00 mm wide, 3.00 mm high. Abdomen 5.20 mm long, 5.10 mm wide, 3.50 mm high. Cephalothorax grayish brown to dark gray, except black eye area, yellow fork-shaped median and submarginal bands. Eye diameter (mm): PME = 0.43, PLE = 0.33, AME = 0.19, ALE = 0.14. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.05, ALE–PME = 0.16, PME–PME = 0.43, PME–PLE = 0.41, PLE–PLE = 1.23, PLE–ALE = 0.83. Eye row length (mm): AE = 0.80, PME = 1.13, PLE = 1.65. MOQ 2.63 times wider behind than in front (0.43 mm), length 1.93 times longer than anterior width. Clypeus height 1.36 times AME diameter. Sternum yellow with a gray

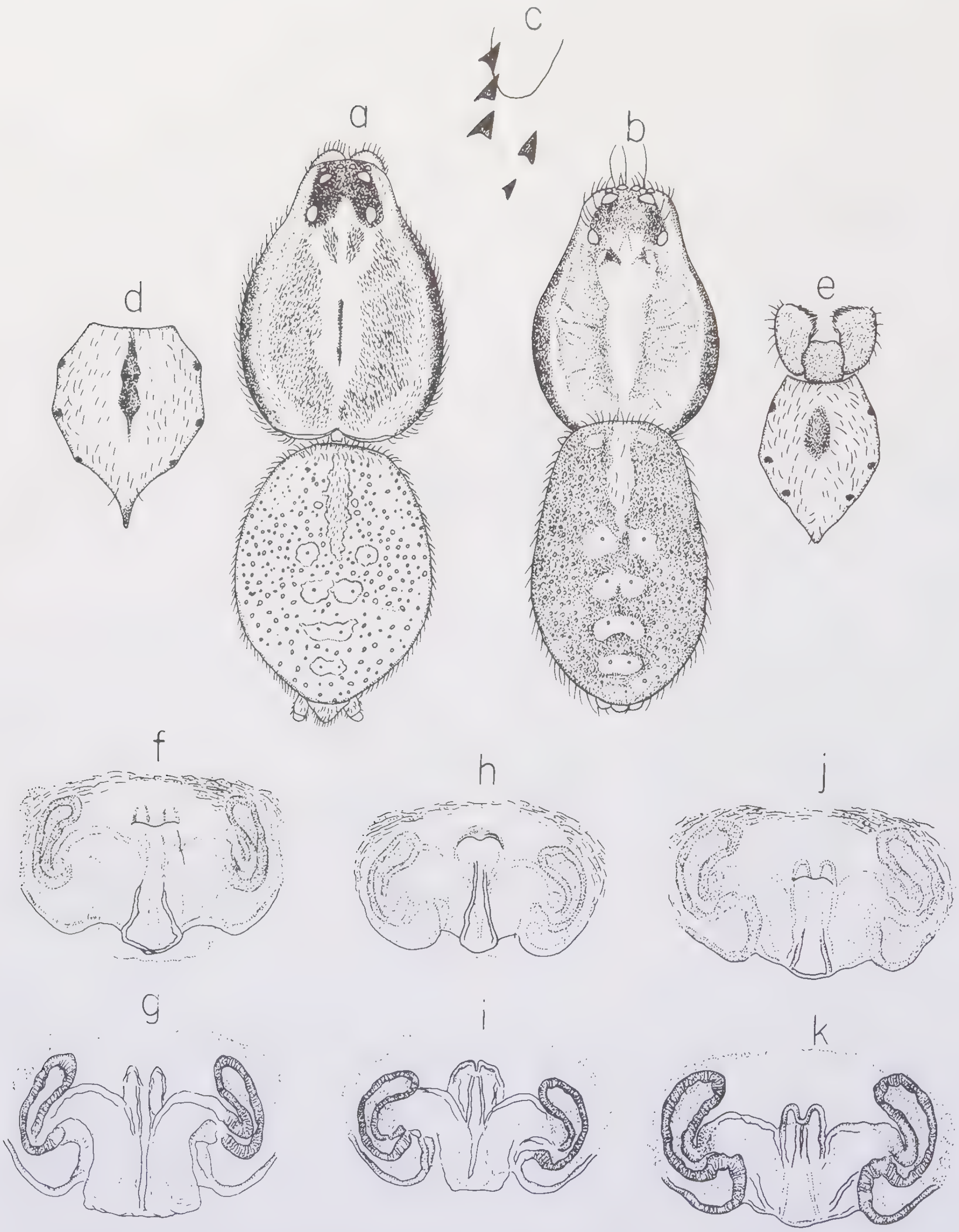


Fig. 224. Female *Pardosa pseudoannulata* (Boesenberg and Strand), fork-like type (a) and dagger-like type of carapace (b); cheliceral teeth (c); sternum longitudinal bands (de); and dorsal and ventral views of epigynum from the Philippines (fg), China (hi), and India (jk) respectively.

median band and six gray to brown marginal spots, longer (2.00 mm) than wide (1.70 mm). Labium pale reddish brown with yellow apical margins, wider (0.65 mm) than long (0.38 mm). Maxillae yellow, narrow basally and broad apically. Scopulae set obliquely in the apex of maxillae. Chelicerae reddish brown, vertical and hirsute frontally. Promargin bears two teeth and retromargin has three teeth. Legs brown, with yellow and gray tinges, long and slender, hirsute and spinous. Spination in femora I = II = 3-0-2-3, III = 3-0-2-2, and IV =

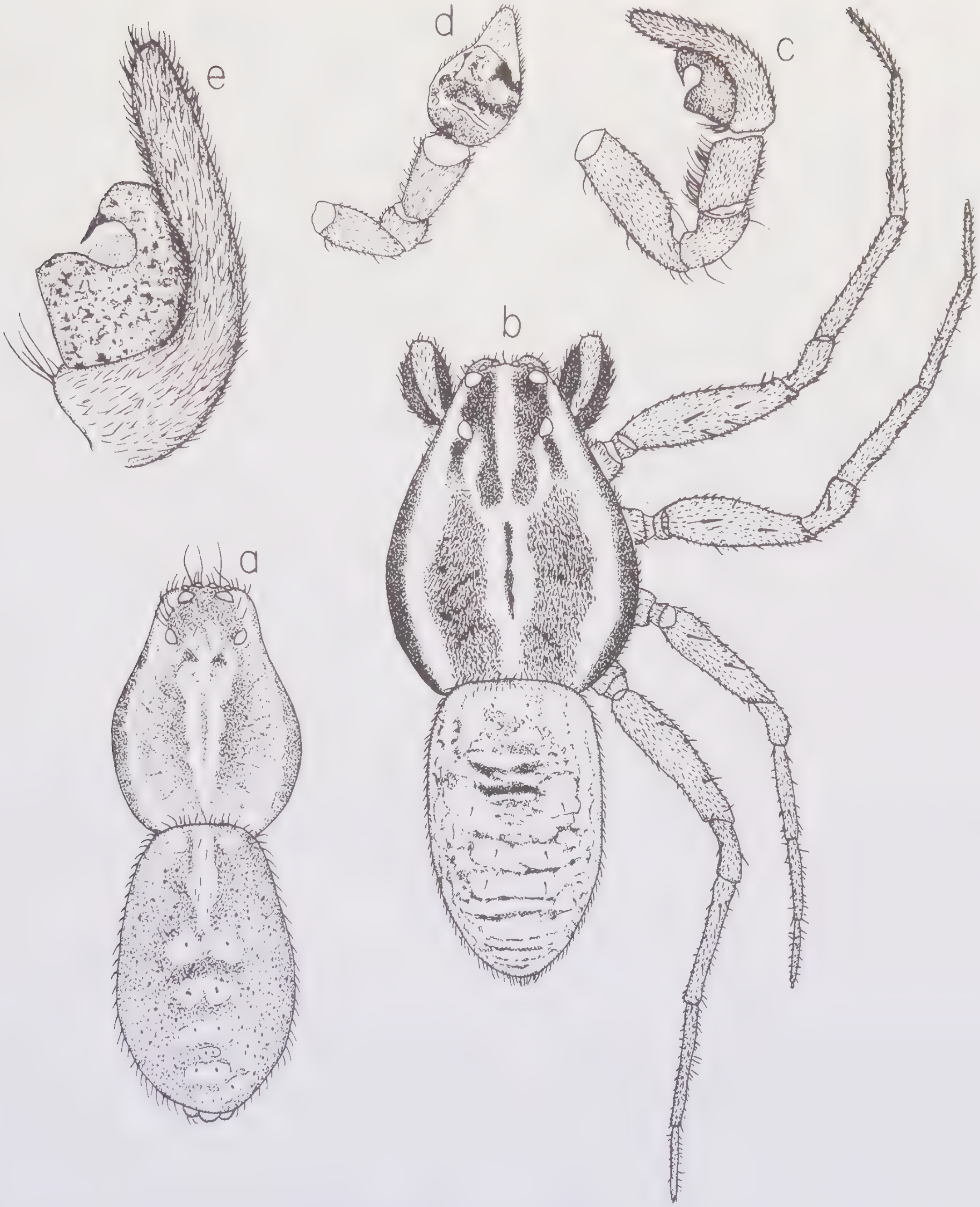


Fig. 225. Male *Pardosa pseudoannulata* (Boesenberg and Strand) (ab); retrolateral (c) and ventral (d) views of pedipalp; and median apophysis (e).

3-0-2-1; tibiae I = 2 (bristles)-7(2-2-3)-2-2, II = III = IV = 2-6(2-2-2)-2-2; metatarsi I = 0-7(2-2-3)-2-2, III = 0-7-3-3, IV = 0-8(1-1-1-1-1-3)-3-3. Distal prolateral spines of femur I obliquely set and close to each other, dorsal spines reduced to slender setae. Dorsal proximal bristle of metatarsus I about one half of metatarsus length, metatarsus I/tarsus I = 1.46. Tarsi two-clawed, each superior claw with five or six teeth in leg I. Leg formula 4123.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.90	1.70	3.50	3.00	2.05	14.15
2	3.80	1.90	3.30	3.10	1.75	13.85
3	3.70	1.55	3.10	3.50	1.65	13.50
4	4.80	1.85	4.35	5.90	2.60	19.50
Pedipalp	1.45	0.70	1.15	–	1.40	4.70

Abdomen gray-brown to dark brown, mottled with yellow dots, yellow band in cardiac area, and three or four yellow transverse bands from middorsum to posterior end. Epigynum bears a convex brown band anterior to hood and lateral lobes, median piece twice longer than broad with a subtruncate posterior piece, lateral lobe rounded posterolaterally and indented towards median piece. Hood fused posteriorly and V-shaped in between. Spermathecae small and globular with at least three tubular structures.

Male (Fig. 225a–e): Total length 6.80 mm. Cephalothorax 3.60 mm long, 3.00 mm wide, 1.80 mm high. Abdomen 3.20 mm long, 1.80 mm wide, 1.70 mm high. Cephalothorax as in female, median and submarginal bands distinct. Eye diameter (mm): PME = 0.38, PLE = 0.34, AME = 0.15, ALE = 0.13. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.04, ALE–PME = 0.10, PME–PME = 0.33, PME–PLE = 0.30, PLE–PLE = 0.95, ALE–PLE = 0.65. Eye row length (mm): AE = 0.70, PME = 1.04, PLE = 1.38. MOQ 2.67 times wider behind than in front (0.39 mm), length 1.79 times longer than anterior width. Clypeus height twice AME diameter. Sternum yellow with a pale gray median band and six gray marginal spots, longer (1.60 mm) than wide (1.40 mm). Labium, maxillae, and chelicerae similar to female. Legs yellowish brown, long, slender, and spinous. Spination in femur I = 3-0-2-3, tibia I = 2-6-2-2, metatarsi I = 0-7-2-2 and IV = 0-8(1-1-1-1-1-3)-3-3. Leg formula 4123. Pedipalp brown except blackish brown tibia and basal one half of tarsus, apical tip of tarsus yellow. Median apophysis with two sharply pointed processes. Embolus coiled on top of median apophysis and posterior to palea and pars pendula. Tegular lobe large and membranous. Cymbium without apical spine.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	1.40	2.75	2.60	1.70	11.45
2	2.90	1.35	2.60	2.60	1.50	10.95
3	2.80	1.20	2.30	2.80	1.30	10.40
4	3.55	1.45	3.20	4.35	2.00	14.55
Pedipalp	1.50	0.75	1.00	–	1.50	4.75

Abdomen brown including cardiac area, with numerous yellow dots, yellow border of cardiac and three to five transverse yellow bands from middorsum to posterior midhalf.

Natural history: Many specimens were collected from ricefields at different seasons and ages of the crop.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Iraga, two females and two males, 21 September 1981, A.T. Barrion; Isabela Prov., Alicia, three females and four subadults, 28 September 1981, A.T. Barrion; Ifugao Prov., Salapadan, one female and eight spiderlings, 23 September 1985, M. Perez; Nueva Ecija Prov., Jaen, 16 females, five males, and 12 immatures, 20 July 1989, D. Estaño; Laguna Prov., Calamba, eight females and three males, 10 October 1987, E. Rico, Los Baños, 18 females, ten males, and 201 spiderlings, 7 August 1980, A.T. Barrion; Liliw, Tuybaana Vill., 68 females, ten males, 21 subadults, and 182 spiderlings, 10 July 1981, T.J. Perfect; *Leyte Is.*, Leyte Prov., Baybay, three males, 16 July 1985, A.T. Barrion; *Panay Is.*, Iloilo Prov., Oton, Rizal Vill., 53 females, 20 males, and 106 spiderlings, 6 May–16 August 1979, M. Lumaban; *Mindanao Is.*, Agusan del Sur Prov., Claveria, Anei Vill., six females and eight immatures, 9 October 1985, A.T. Barrion; South Cotabato, Koronadal, Morales, 21 females, ten males, and five subadult females, 25 February 1991, A.T. Barrion; Zamboanga del Sur, Molave, 15 females and 62 spiderlings, 10 August 1979, A.T. Barrion and C. de Castro; *Palawan Is.*, Palawan Prov., Brooke's Point, six females and six males, 23 September 1987, A.T. Barrion. **INDONESIA:** Yogyakarta, Klaten, Kerang Anon, 11 females and two males, 22 August 1989, A.T. Barrion; Central Java, Wates, three females and five subadult males, 23 August 1989, A.T. Barrion. **THAILAND:** Prachinburi Prov., Prachinburi, 11 females, four males, eight subadults, and three spiderlings, 26 July 1989, A.T. Barrion. **VIETNAM:** Hanoi, Song Phuong, five females and four males, 9 August 1990, A.T. Barrion; Tien Giang Prov., Long Dinh, eight females and ten immatures, 13 August 1990, A.T. Barrion. **BANGLADESH:** Dacca, Joydevpur, 18 females, 12 males, and 24 spiderlings, 30 October 1984, N.Q. Kamal. **INDIA:** Tamil Nadu, Madurai, two females and one male, 3 April 1990, M. Venogupal.

Distribution: China, Japan, Korea, India, Bangladesh, Nepal, Laos, Cambodia, Thailand, Vietnam, Philippines, Malaysia, Singapore and Indonesia.

Remarks: Some specimens have a pair of parallel, longitudinal, oblong brown spots and another pair of oblong sausage-shaped transverse spots posterior to PE area.

Pardosa sumatrana (Thorell)

(Figs 226a–f, 227a–d)

Lycosa sumatrana Thorell, 1890. Ann. Mus. Stor. Nat. Genova 30: 136.

L. arorai Dyal, 1935. Bull. Dept. Zool. Punjab Univ. 1: 140.

Pardosa sumatrana Hogg, 1919. Journ. Feder. Malay. Stat. Mus. 8(3): 100.

Redescription:

Female (Fig. 226a–f): Total length 8.40 mm. Cephalothorax 4.10 mm long, 3.40 mm wide, 2.5 mm high. Abdomen 4.30 mm long, 2.90 mm wide, 3.20 mm high. Cephalothorax bears a yellow median band radiating from fovea in different lengths, broadened anterior to fovea, with two pale brown spots posteriorly and two triangular spots anteriorly just posterior to PLE; more distinct submedian yellow band and black lateral margins and eye rings. Eye diameter (mm): PME = 0.50, PLE = 0.45, AME = 0.18, ALE = 0.15. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.05, ALE–PME = 0.10, PME–PME = 0.39, PME–

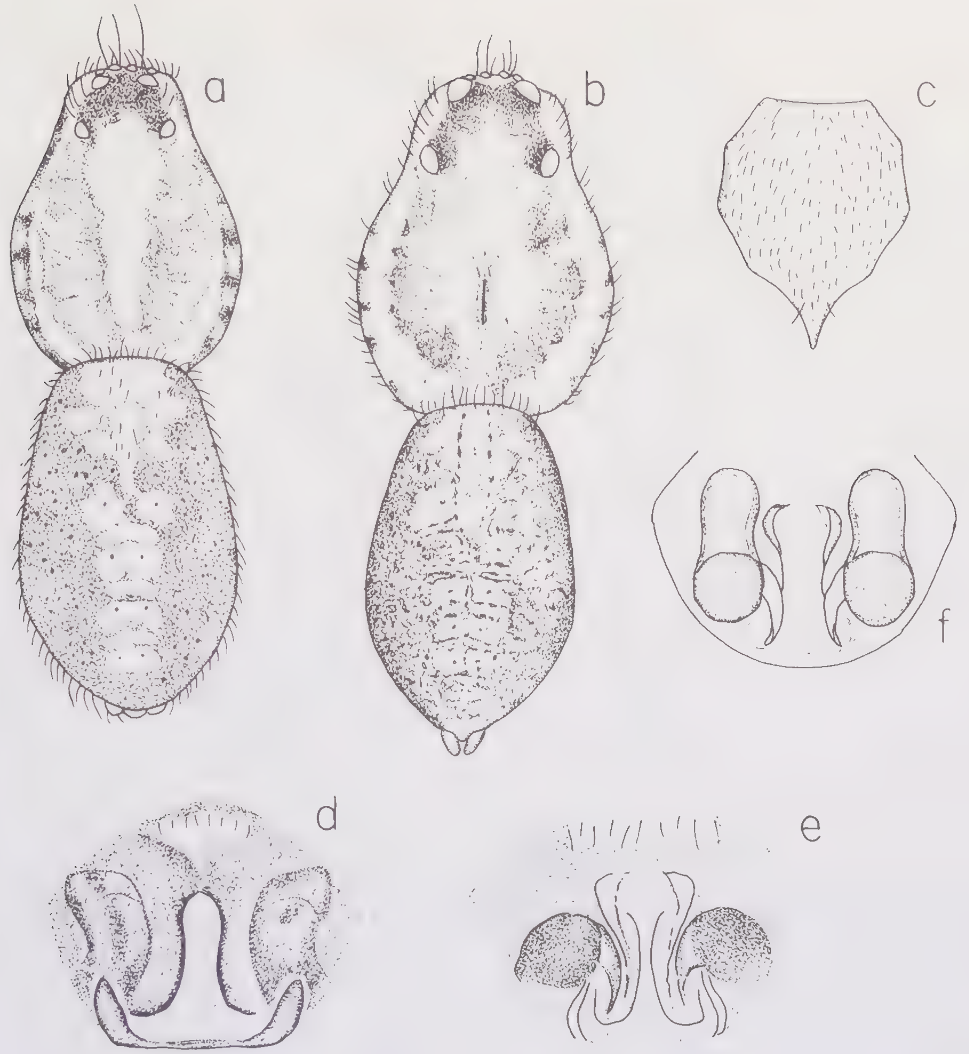


Fig. 226. Female *Pardosa sumatrana* (Thorell) (ab); sternum (c); and dorsal (de) and ventral (f) views of epigynum.

PLE = 0.36, PLE–PLE = 1.14, ALE–PLE = 0.89. Eye row length (mm): AE = 0.88, PME = 1.28, PLE = 1.63. MOQ 2.56 times wider behind than in front (0.50 mm), length 1.62 times longer than anterior width. Clypeus height 1.17 times AME diameter, and with two gray bands below AE, each band bearing two setae converging to the other pair of spinnerets. Sternum yellow with a broad gray to black median band, erect brown hairs, longer (1.80 mm) than wide (1.40 mm). Labium reddish brown with yellow anterior margins, slightly longer than wide to as long as wide. Maxillae yellow, except brown-yellow scopulae, anteriorly broader than posterior end. Chelicerae dark brown to reddish brown, promargin with two teeth and retromargin with three teeth. Legs yellow with gray bands in femora, patellae, and tibiae, gray bands more prominent in femora I–IV. Spination in femora I = 3-0-2-3, III = 3-0-2-2, and IV = 3-0-2-1, prolateral distal spines in femur I of right leg close to each other and prolateral spines in left leg widely separated; tibiae I = 2-8-2-2 and II = 2-6-2-2, dorsal tibial spines weak in legs I and II; metatarsi I = 0-7(2-2-3)-3-3 and IV = 0-8(1-1-1-1-1-3)-3-3. Femur III and metatarsus III subequal. Metatarsus I/tarsus I = 1.58, metatarsus I bears long subbasodorsal setae about 0.40 length of entire segment and four dorsal trichobothria in increasing length towards apex. Tarsi three-clawed with a moderately long median claw and six teeth in each superior claw. Leg formula 4123. Pedipalp as long as combined length of femur III and patella III, light reddish brown except yellow femur with gray bands, tarsus single-clawed with at least three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.90	1.70	3.50	3.15	2.00	14.25
2	3.80	1.50	3.25	3.10	1.90	13.55
3	3.40	1.45	2.80	3.40	1.75	12.80
4	4.70	1.85	4.30	6.10	2.50	19.45
Pedipalp	1.60	0.75	1.10	–	1.40	4.85

Abdomen brownish gray with black spots at bases of

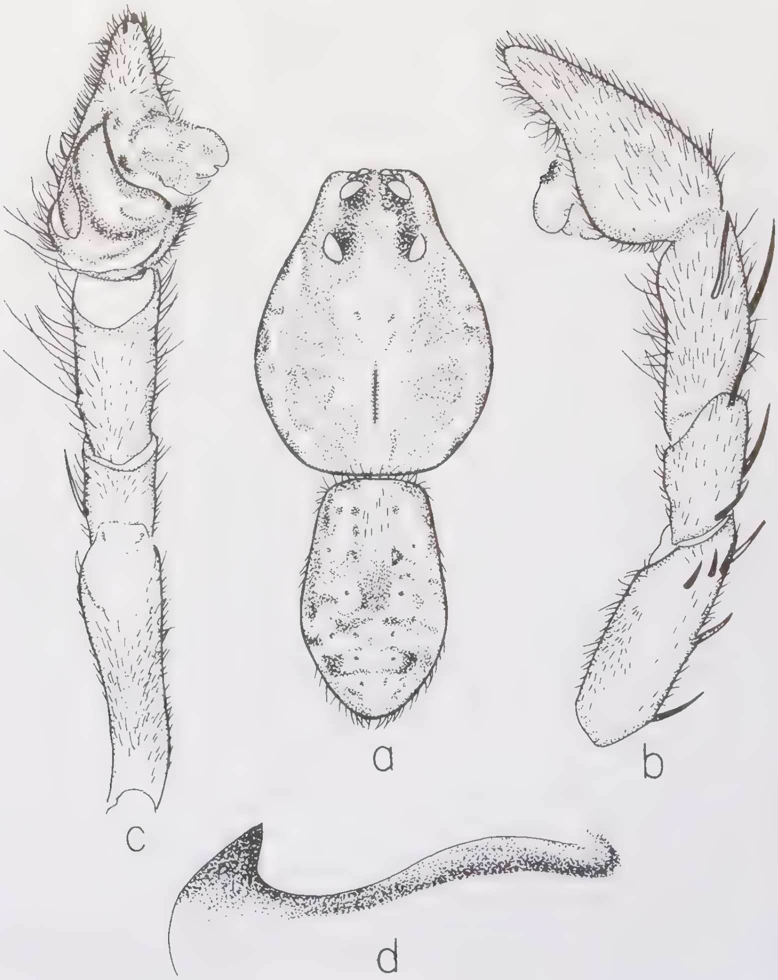


Fig. 227. Male *Pardosa sumatrana* (Thorell) (a); retrolateral (b) and ventral (c) views of pedipalp; and median apophysis (d).

setae and subglobular yellow mark around cardiac area, transverse yellow medially and tapers posteriorly. Laterals with scattered yellow spots on the brown background. Venter yellow except brownish epigynum. Anterior spinnerets very short, separated from each other and moderately converging. Posterior pair almost twice longer than anterior pair. Epigynum with an inverted T-shaped median septum, transverse piece twice bigger than longitudinal process, and a/b = 2. Globular spermathecae hardly above the compactly coiled copulatory duct.

Male (Fig. 227a–d): Total length 7.50 mm. Cephalothorax 4.00 mm long, 3.20 mm wide, 2.40 mm high. Abdomen 3.50 mm long, 1.70 mm wide, 1.80 mm high. Brownish cephalothorax bears a broad yellow median band, broad anteriorly and tapering posteriorly. Submarginal bands relatively broader than in female and some portions extended to gray to black lateral margins. Eye margins black and PE area dark brown. Eye diameter (mm): PME = 0.45, PLE = 0.38, AME = 0.20, ALE = 0.10. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.05, ALE–PME = 0.10, PME–PME = 0.35, PME–PLE = 0.40, PLE–PLE = 0.96, ALE–PLE = 0.76. MOQ 2.5 times wider behind than in front (0.46 mm), length 1.7 times longer than anterior width. Clypeus height 1.15 times larger than AME diameter. Sternum, labium, maxillae, and chelicerae similar to the female. Legs as in female except for lighter transverse bands in femora and tibiae. Spination as in female. Leg formula 4132. Pedipalp longer than femur IV, grayish brown with dark reddish brown tibia and tarsus. Femur bears four subapical spines (two dorsal, one prolateral, and one retrolateral) in a transverse row, spination = 4(1-1-2)-0-1-1. Embolus transverse, emanating from prolaterodistal part of palea, moderately long and thin. Palea with a large bulbous membranous or sclerotized plate. Median apophysis with a very short process. Cymbium with two large apical spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.50	1.45	3.50	3.35	1.90	13.70
2	3.40	0.95	2.55	3.15	1.85	11.90
3	3.30	1.35	2.85	3.05	1.50	12.05
4	4.30	1.65	3.70	5.50	2.25	17.40
Pedipalp	1.60	0.70	1.00	-	1.50	4.80

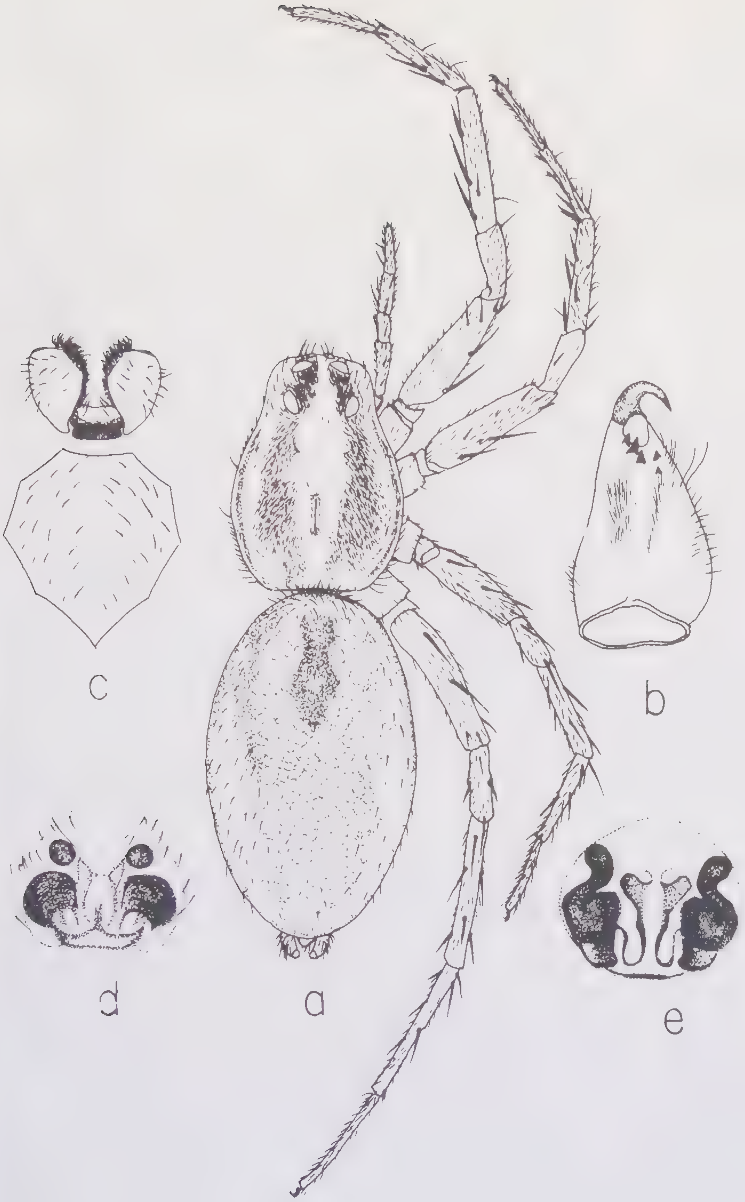


Fig. 228. Female *Pardosa irriensis* n. sp. (a); inner lateral view of chelicera (b); sternum, labium, maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Abdomen twice longer than wide, pattern as in female except the more circular interconnected yellow spots in posterodorsal one half.

Natural history: One female, one male, and one immature male were all collected by D-Vac suction machine from upland rice intercropped with corn under coconut trees damaged by armyworm in August. One female was collected in Indonesia from a newly drained irrigated ricefield in August.

Material examined: PHILIPPINES: *Mindanao Is.*, Zamboanga del Sur, Molave, one female, one male, and one immature male, 9 August 1979, A.T. Barrion. **INDONESIA:** Yogyakarta, Klaten, Kerang Anon, one female, 22 August 1979, A.T. Barrion.

Distribution: India, Nepal, Sri Lanka, Indonesia, Japan and the Philippines (new record).

Pardosa irriensis new species
(Fig. 228a–e)

Description:

Female: Total length 6.90 mm. Cephalothorax 3.40 mm long, 2.72 mm wide, 1.40 mm high. Abdomen 3.50 mm long, 2.12 mm wide, 2.00 mm high. Cephalothorax brown to dark brown, particularly between ALE and PLE, yellow median band broad and double knob-like anterior to long black fovea, submedian bands narrower than median and with five or six extensions to lateral margins. Eye diameter (mm): PME = 0.40, PLE = 0.35, AME = 0.18, ALE = 0.13. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.15 (right side) and 0.05 (left side), ALE–PME = 0.14, PME–PME = 0.43, PME–PLE = 0.38, PLE–PLE = 1.00, ALE–PLE = 0.78. Eye row length (mm): AE = 0.81, PME = 1.10, PLE = 1.45. MOQ 2.89 times wider behind than in front, length 1.89 times longer than anterior width (0.38 mm). Clypeus height as long as one AME diameter. Sternum yellow, slightly longer (1.44 mm) than wide (1.24 mm). Labium yellow apically and reddish brown basally, similar to fangs. Maxillae uniformly yellow except light brown scopulae, longer than wide, and broader apically than base. Chelicerae brownish yellow with two promarginal and three retromarginal teeth. Legs yellowish brown with strong and long ventral spines in tibiae and metatarsi. Spination in femora I = II = 3-0-2-3, IV = 3-0-2-1; tibiae I = 0-6-2-2, with two dorsal and a midprolateral thin bristles, and III = 2-6-2-2; metatarsi I = 0-6-2-3, III = 0-6(1-1-1-3)-2-1, and IV = 0-6(1-1-1-1-1-1)-3-3. Basodorsal one fourth of metatarsus I with two long thin bristles, one closer to prolateral and the other to retrolateral. Metatarsus I/tarsus I = 1.25. Leg formula 4123. Pedipalp longer than all femora, femur with a perpendicular ventral spine, spination in tibia = 1-0-2-0 and tarsus = 0-0-3-2, tarsus single-clawed with three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	1.32	2.48	2.20	1.76	10.76
2	2.84	1.00	2.32	2.28	1.64	10.08
3	2.68	1.12	1.88	2.32	1.40	9.40
4	3.44	1.28	3.00	4.40	2.08	14.20
Pedipalp	1.20	0.50	0.90	–	1.15	3.75

Abdomen very similar to *Pardosa pseudoannulata* except for two longitudinal white bands in basal one half and five transverse pale white bands posterodorsally. Epigynum ovate to subglobular, with a narrow longitudinal arm shorter than transverse median piece. Hood diverging anteriorly. Copulatory duct looped once, curved outwards and inwards with spherical diverging spermathecae.

Etymology: Named after type locality.

Natural history: The specimens were all D-Vac collected in irrigated wetland rice in January and September.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, holotype female, 4 September 1979, A.T. Barrion, one paratype female, same locality data as holotype, 10 Januay 1979, A.T. Barrion.

Distribution: Philippines.

Pardosa birmanica Simon
(Figs 229a–i, 230a–j)

Pardosa birmanica Simon, 1884. Ann. Mus. Civ. Stor. Nat. Genova 20: 333.

Lycosa birmanica Thorell, 1895. Descriptive Catalogue of Spiders of Burma: 242.

Pardosa bhatnagari Sadana, 1972. Ent. Monthly Mag. 107: 226.

Redescription:

Female (Fig. 229a–i): Total length 7.05 mm. Cephalothorax 3.50 mm long, 2.40 mm wide, 2.30 mm high. Abdomen 3.55 mm long, 2.50 mm wide, 2.50 mm high. Cephalothorax dark brown, except black eye area, brownish red fovea, and pale yellow-brown median band around fovea. AE slightly procurved. Eye diameter (mm): PME = 0.36, PLE = 0.30, AME = 0.16, ALE = 0.11. Eye separation (mm): AME–AME = 0.18, AME–ALE = 0.05, ALE–PME = 0.13, PME–PLE = 0.41, PLE–PLE = 0.75, ALE–PLE = 0.75. Eye row length (mm): AE = 0.73, PME = 0.99, PLE = 1.25. MOQ 2.44 times wider behind than in front (0.43 mm), length 1.4 times longer than anterior width. Clypeus height 2.8 times AME diameter. Sternum yellowish gray, longer than wide, pointed posteriorly, and truncate anteriorly. Labium reddish brown with yellow apex, slightly wider than long. Distal end of maxillae wider than proximal, bearing yellow-brown hairs or scopulae. Chelicerae reddish brown, bearing two promarginal and three retromarginal teeth. Legs long and moderately thin, yellowish brown, mottled with transverse greenish gray bands in all segments except tarsi. Spination in femur I = 3-0-2-3, tibia I = 2 bristles-6-2-3, and metatarsus I = 0-7-2-2. Femur I as long as metatarsus III. Tibia I bears 42 dorsal weak spines. Metatarsus I/tarsus I = 1.40. Metatarsus I bears one thin, long dorsoretrolateral and two equally thin but much longer dorsoprolateral setae. Tarsi three-clawed, each superior claw with five or six teeth and inferior claw with no teeth. Leg formula 4123. Pedipalp as long as combined length of femur I and patella I, tarsus single-clawed with three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.65	1.20	2.30	2.10	1.50	9.75
2	2.50	1.00	1.85	2.00	1.40	8.75
3	2.10	1.10	1.95	2.15	1.30	8.60
4	3.20	1.25	2.60	4.10	1.75	12.90
Pedipalp	1.20	0.55	0.85	–	1.25	3.85

Abdomen dark brown to black, with white spots and transverse patches dorsally, venter yellow except brownish red to black epigynum. Spinnerets subequal in length, anterior pair slightly more robust than the posterior pair. Epigynum bears a lateral lobe extended beyond epigastric furrow, double truncate posteromedially, with a broader ventral and a narrower dorsal piece. Hood very small, just below spermathecae, a/b = 0.71 (a = width of median septum at constricted point, b = width of median septum of epigynum). Copulatory tube transverse, with coiled anterior and posterior ends.

Male (Fig. 230a–j): Total length 5.70 mm. Cephalothorax 3.00 mm long, 2.50 mm wide, 2.20 mm high.

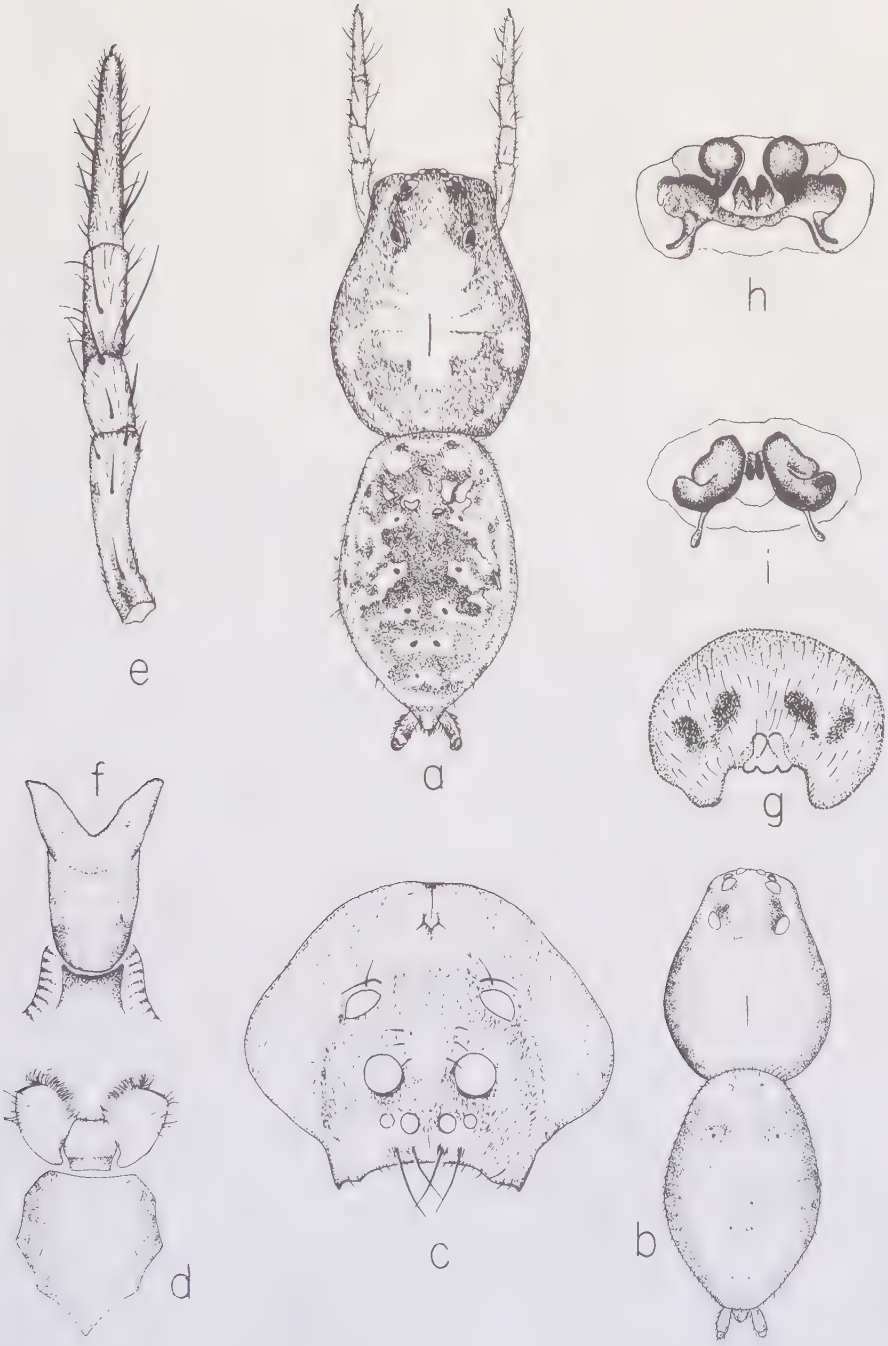


Fig. 229. Female *Pardosa birmanica* Simon (ab); frontal view of carapace (c); sternum, labium, and maxillae (d); pedipalp (e); pedicel (f); and dorsal (g) and ventral (hi) views of epigynum.

Abdomen 2.70 mm long, 1.90 mm wide, 1.90 mm high. Cephalothorax as in female except for the unique flower-like yellow dorsomedian band. Eye diameter (mm): PME = 0.31, PLE = 0.28, AME = 0.13, ALE = 0.11. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.05, ALE–PME = 0.13, PME–PME = 0.33, PME–PLE = 0.40, PLE–PLE = 0.78, ALE–PLE = 0.70. MOQ 2.45 times wider behind than in front (0.38 mm), length 1.45 times longer than anterior width. Clypeus height 1.45 times larger than one AME diameter. Sternum, labium, and maxillae as in female. Chelicerae bear two promarginal and three retromarginal teeth. Leg formula, spination, and coloration as in female. Pedipalp slightly longer than combined length of femur IV and patella IV. Patella and tibia white, femur yellowish gray and cymbium dark brown. Embolus base on the palea area, anterior to tegulum, basal one half of coil transversely curved and apical one half curved posteriorly. Subtegulum with a small and a large lobe. Tegular lobe truncate apically and indented subapically. Tip of cymbium without spine or with a minute seta.

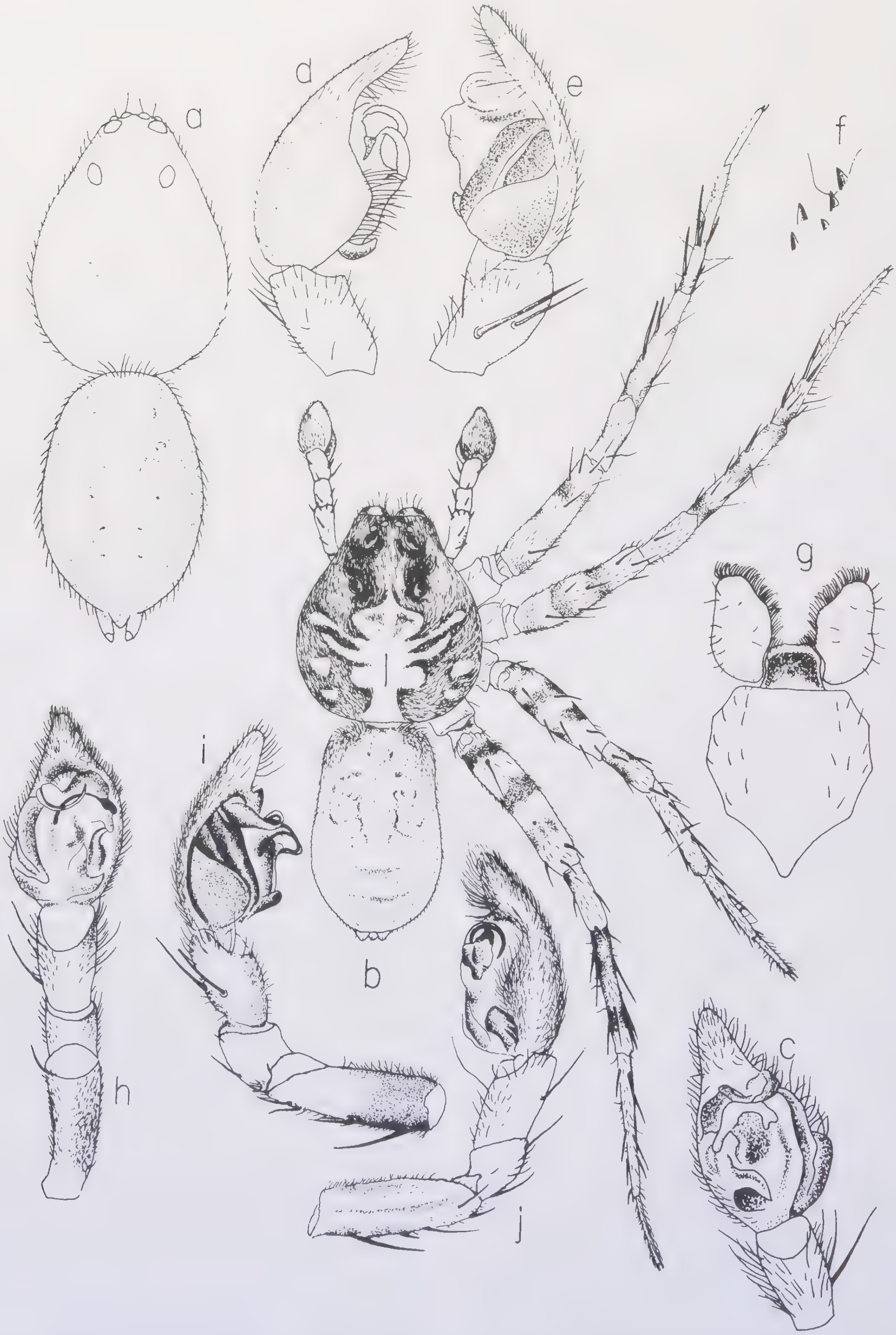


Fig. 230. Male *Pardosa birmanica* Simon from upland ricefield (a) and picric acid-filled pitfall trap (b); ventral (c) and lateral (de) views of cymbium and tibia; cheliceral teeth (f); sternum, labium, and maxillae (g); and ventral (h) and lateral (ij) views of entire pedipalp.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.90	1.05	2.00	1.95	1.30	8.20
2	2.05	1.00	1.80	1.90	1.10	7.85
3	1.90	0.90	1.55	1.90	1.00	7.25
4	2.60	0.95	2.20	3.50	1.60	10.85
Pedipalp	1.10	0.50	0.70	–	1.30	3.60

Abdomen elongate, anteriorly dark brown to black and the rest brown mottled with white spots (note: old preserved specimens only show dark brown anterior and yellowish brown dorsum with remnants of transverse brown bands).

Natural history: *P. birmanica* prefers dry habitat like levees, bunds, and upland areas. Adults are often collected from November to April, females with egg cocoons abound in January to February.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, three females and 21 spiderlings, 17 January 1980, A.T. Barrion; four females and 68 spiderlings, 7 February 1980, A.T. Barrion; Victoria, Masapang Vill., one female and two males, 2 August 1979, R. Apostol; Lipa City, Marauoy Vill., ten females and two males, 27 December 1981, R. Barrion; Ifugao Prov., Banawe, four females and three males, 24 October 1979, A.T. Barrion; *Mindanao Is.*, Agusan del Sur Prov., Talacogon, Del Monte, three females, each with egg cocoons, 12 July 1979, A.T. Barrion. **INDONESIA:** Yogyakarta, Klaten, Kerang Anon, two females and one male without left pedipalp, 22 August 1987, A.T. Barrion.

Distribution: India, Pakistan, Bangladesh, Burma, the Philippines and Indonesia.

Remarks: Specimens from Northern Luzon, Ifugao Province are relatively smaller in size, more dark-colored, with more distinct paired white spots in the abdomen and pale yellow dorsomedian band in the cephalothorax. Cymbium is also shorter than in those found elsewhere.

Pardosa mackenziei (Gravely)

(Figs 231a–f, 232a–d)

Lycosa mackenziei Gravely, 1924. Rec. Indian Mus. 26: 606.

P. mackenziei Roewer, 1951. Abh. Naturw. Ver. Brewen 32: 437–456.

Redescription:

Male: Total length 5.50 mm. Cephalothorax 2.90 mm long, 2.70 mm wide, 1.30 mm high. Abdomen 2.60 mm long, 1.40 mm wide, 1.80 mm high. Cephalothorax yellowish brown except for a brown fovea, brownish black PE area, brown streaks on each side of fovea, white eye rims in PME, area between AE row PME, posterior of PLE, and a basal yellow longitudinal median band. CL/CW = 1.07. Eyes homogeneous, AE row straight and shorter than PME row (0.63 : 80 mm) and PLE row (0.63 : 1.13 mm). Eye diameter (mm): AME = 0.18, ALE = 0.10, PME = 0.31, PLE = 0.25. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.04, ALE–PME = 0.15, PME–PME = 0.23, PLE–PLE = 0.85. Clypeus yellow, height a little wider than one AME diameter, bears five setae (three brown and two yellow), the three brown ones forming a triangle with apical seta below AME and the other two outside yellow setae in the middle of clypeus area. Sternum yellow similar to labium and maxillae, longer than wide (0.83 : 0.70 mm), apical margin slightly concave to straight and posterior tip blunt between coxae IV. Maxillae with a truncate apex lateral of the yellow-brown scopulae. Chelicerae yellow, promargin bears two teeth and retromargin with three teeth. Legs yellow-brown, long and relatively slender. Spination in femora I = II = 3-0-2-3, II = 3-0-2-2, IV = 3-0-1-2; tibia I–IV = 2 (only bristles in tibia I and II)-6(2-2-2)-2-2); metatarsi I and II each with five (2-2-1) ventral spines. Metatarsus I/tarsus I = 1.78. Tarsis three-clawed, each superior claw in leg I with five or six teeth. Leg formula 4123. Pedipalp yellow with dark brown to black cymbium and apex of femur with four spines (two dorsal and one each of prolateral and retrolateral spines) in a transversely straight row. Apicodorsal part of tibia with blackish hairs, ventrolaterals with at least five brown setae and two lateral spines. Tegulum bears two or three transverse ridges. Distal process of median apophysis rounded laterally but its anterior tip sharply pointed in ventral view, ratio of width (a) to length (b) of median apophysis = 0.66.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	1.40	3.20	3.20	1.85	12.75
2	3.10	1.10	3.10	3.00	1.80	12.10
3	2.80	1.00	2.50	2.70	1.50	10.50
4	4.15	1.35	3.80	4.70	2.20	16.20
Pedipalp	1.50	0.70	0.95	–	1.50	4.65

Abdomen yellowish brown with four narrow transverse white bands in the posterior one half, dense mat of brown setae apically and four to six brown dots circling the cardiac area. Venter whitish yellow except yellowish brown book lungs. AbL/AbW = 1.86. Anterior pair of spinnerets longer and more robust than the posterior pair, and with separate bases.

Female: Total length 10.50 mm. Cephalothorax 4.20 mm long, 3.20 mm wide, 2.90 mm high. Abdomen 6.30 mm long, 3.70 mm wide, 4.50 mm high. Cephalothorax coloration and pattern as in the male except for at least four brown longitudinal striae radiating from the fovea. CL/CW = 1.31. Eyes with more distinct white eye rims and bearing a T-shaped white band between AE row and PME row. Eye diameter (MM): AME = 0.18, ALE = 0.13, PME = 0.40, PLE = 0.35. Eye separation (mm): AME-AME = 0.14, AME-ALE = 0.08, ALE-PME = 0.18, PME-PME = 0.33, PME-PLE = 0.38, PLE-PLE = 1.08. Length of eye row (mm): AE = 0.95, PME = 1.1, PLE = 1.43. Clypeus wide, 1.25 times wider than AME diameter, and bears five long brown setae (four

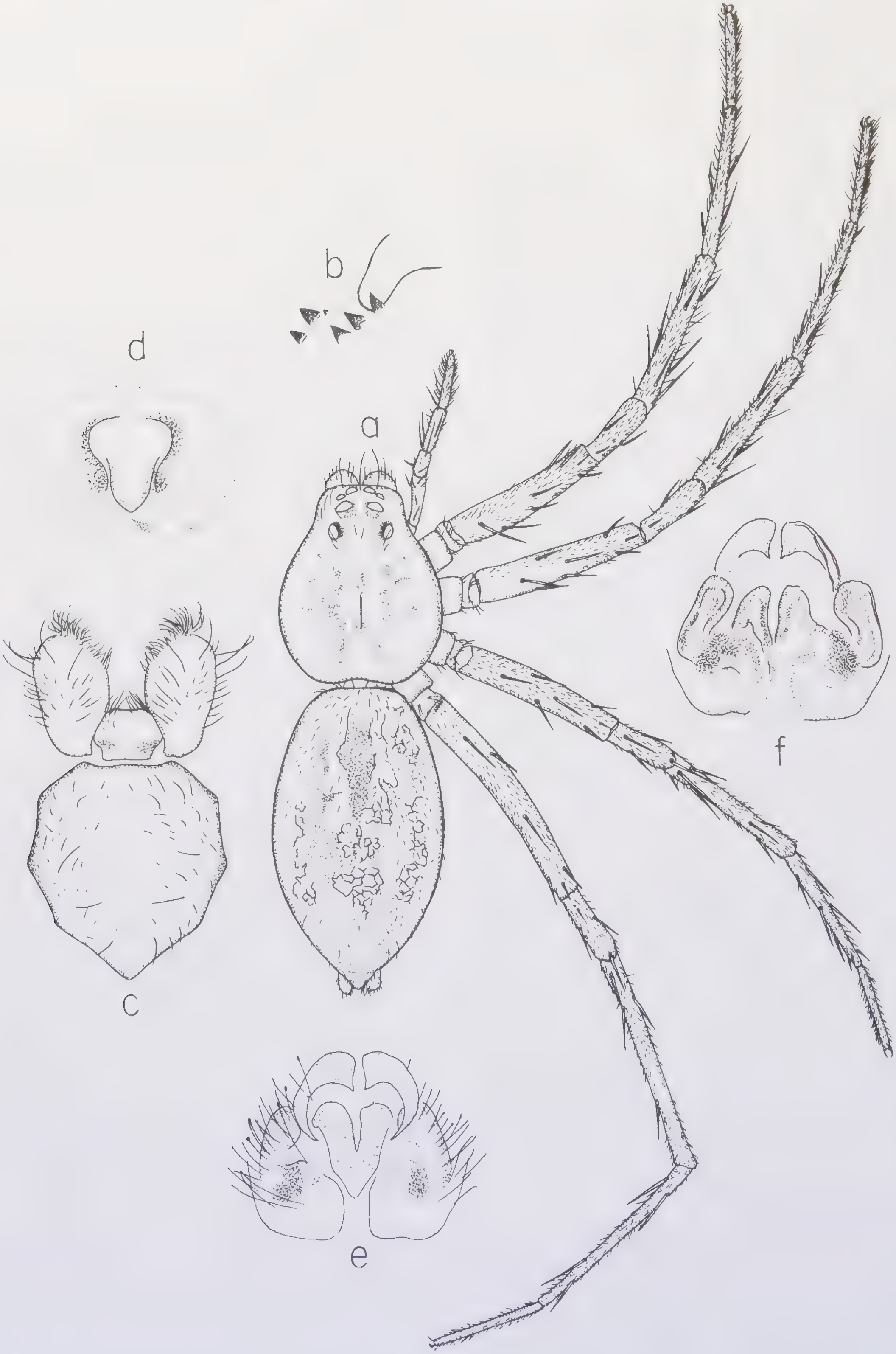


Fig. 231. Female *Pardosa mackenziei* (Gravely) (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (de) and ventral (f) views of epigynum.

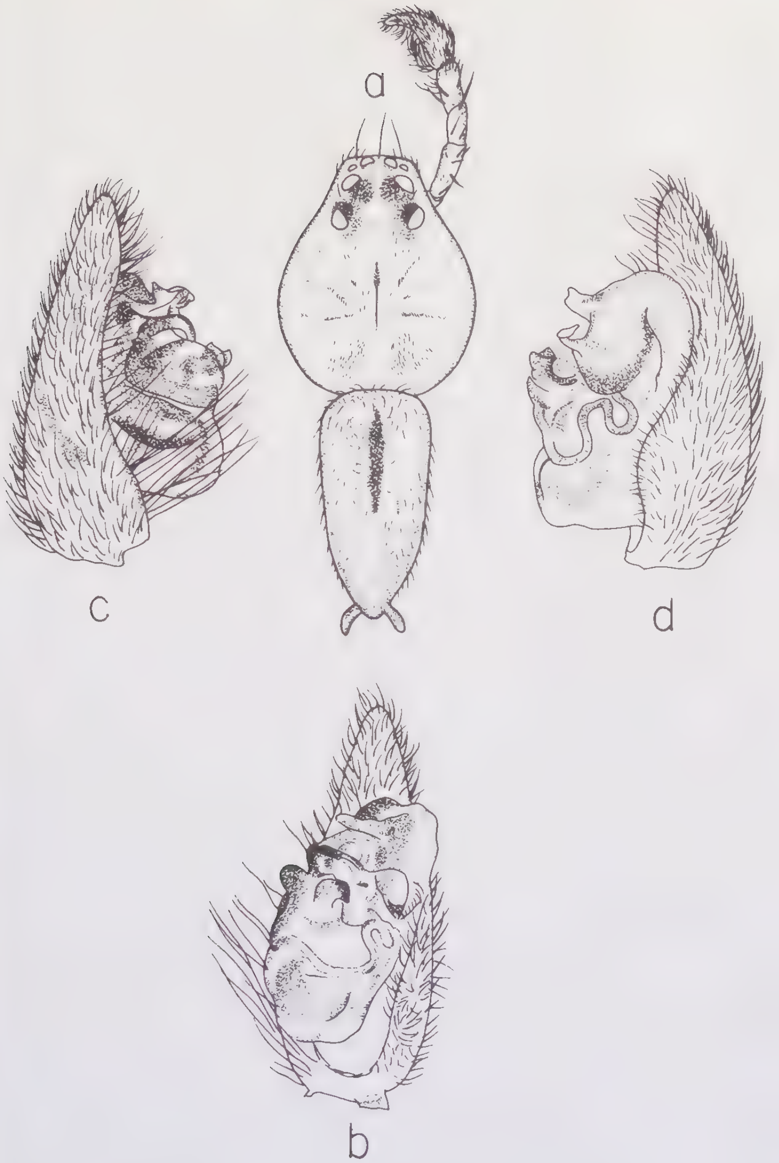


Fig. 232. Male *Pardosa mackenziei* (Gravely) (a); and ventral (b) and lateral (cd) views of cymbium.

median and one below AME separation). Sternum yellow with whitish margins, slightly longer than wide, apically truncate and sharply pointed posteriorly between coxae IV. Labium brownish red with a yellow and medially concave anterior margin, and transversely constricted at midhalf. Maxillae yellow similar to male but with denser scopulae. Chelicerae with three retromarginal and two promarginal teeth. Legs yellow and slender with strong spines and ventral scopulae in metatarsi and tarsi. Spination in femora I = 3-0-2-3; tibia I = 2-6(2-2-2)-2-2; metatarsi I = 0-5(2-2-1)-4(1-1-2)-4(1-1-2). Dorsobasal one eighth of metatarsi I and II each with a long thin seta, four times longer than basal metatarsal diameter in leg I and 3.3 times in leg II. Leg formula 4123. Pedipalp as long as combined length of metatarsi III and tarsi III, tarsal tip single-clawed with three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.90	1.80	3.75	3.60	2.00	15.05
2	4.00	1.65	3.70	3.45	2.15	14.95
3	3.70	1.45	3.00	3.50	1.75	13.40
4	5.00	2.00	4.50	5.70	3.00	20.20
Pedipalp	1.55	0.85	1.40	–	1.45	5.25

Abdomen ovoid yellowish brown with irregular brown dots dorsally. Venter uniformly pale yellow except reddish brown epigynum with a deep median cleft in the posterior epigynal margin created by the highly sclerotized posterolateral plates, hood present anteriorly with a longitudinal furrow in the middle, openings underneath the hood and a tongue-like or triangular median spetum very prominent. Length of median septum as long as its basal diameter. Spermathecal tips

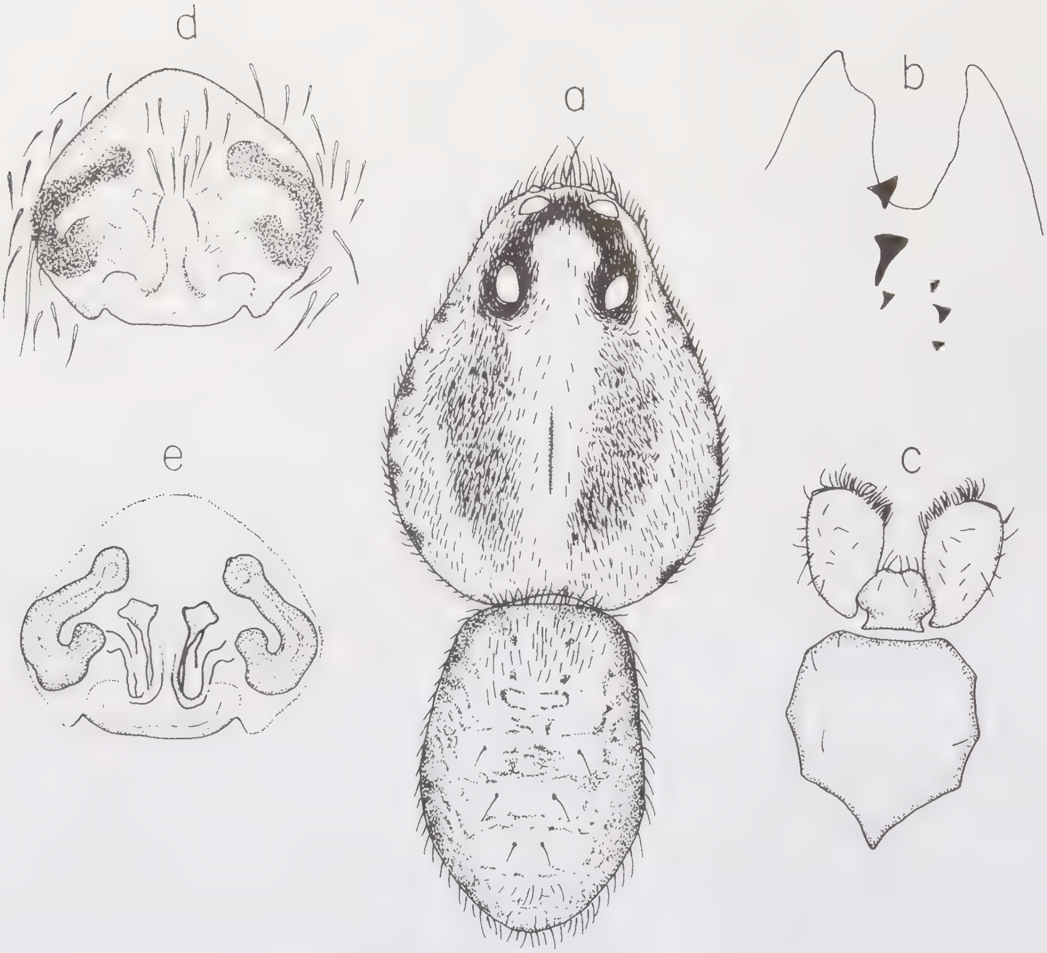


Fig. 233. Female *Pardosa patapatensis* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

directed toward each other and separated at this point by a distance slightly longer than the length of spermathecae.

Natural history: The specimens were all collected by sweep net from an irrigated ricefield in October, and deepwater rice in June–August flooded period.

Material examined: BANGLADESH: Dacca, Joydevpur, Bangladesh Rice Research Institute (BRRI) Experimental Station, one male and one female, 30 October 1984, A.T. Barrion; two immatures, two males (one without abdomen) and one female, same data as adult male and female, June–August 1977, H.D. Catling.

Distribution: India, Pakistan and Bangladesh.

Remarks: Treated as *Lycosa mackenziei* Gravely (Platnick 1989); needs further examination.

Pardosa patapatensis new species
(Fig. 233a–e)

Description:

Female: Total length 6.26 mm. Cephalothorax 3.38 mm long, 2.50 mm wide, 1.94 mm high. Abdomen 2.88 mm long, 1.72 mm wide, 1.38 mm high. Cephalothorax hirsute, median band yellow and dagger-like, subdorsal bands broad and blackish brown, lateral bands yellow, margins of carapace dark brown with yellow interlocking margins, ocular area black, U-shaped, and with white hairs between PME–PLE and PME–AE. Fovea deep brown, long, a little shorter than length of PME, 13–15 striae directed towards it, bordered by median band. Cephalic area narrower than thoracic area, with a recurved posterior end. Intereye lengths (mm) in decreasing order: PLE = 1.36, PME = 0.98, AE = 0.68. Eye diameters (mm): PME = PLE = 0.32, AME = ALE = 0.12. AME–AME separation close to one AME diameter. AME–ALE separation one half AME diameter. PME–PME separation greater than one PME diameter. PLE–PLE separation three PLE diameters. Clypeus height twice AME–AME separation. Sternum yellow, one third longer than wide, bean-shaped, and scopulae in the inner junction of lateroapical border. Chelicerae brown with gray marks on the dorsobasal one half above boss, with three promarginal and three retromarginal teeth, apical tooth of each promargin minute. Legs yellow with distinct gray patches on femora, spination formulae: tibia I d = 0 except two long thin hairs, dorsobasal one half with five or six trichobothria, and venter with nine erect hairs, p = 2 plus one long thin at midhalf, v = 6, r = 2, ventral spines overlap each other except the short apical pair, retrolateral with a long thin hair at midlength. Metatarsus I = 0-7-2-3, dorsum with three long trichobothria in increasing length distally, basal one fourth of retrolateral with one long thin hair. Tarsi three-clawed with six teeth, distal one half with two long trichobothria dorsally. Leg formula 1432. Pedipalps with gray tinges, as in legs, each single-clawed with three teeth, spination in tibia = 1-0-2-3, retrolaterals with three trichobothria, and tarsus = 2-0-2-1, venter with one long thin erect hair.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.40	1.12	2.28	2.08	1.64	9.52
2	2.12	0.90	1.72	2.08	1.48	8.30
3	2.00	1.06	2.04	2.32	1.36	8.78
4	2.48	1.16	2.20	2.08	1.48	9.40
Pedipalp	1.20	0.60	0.92	–	1.12	3.84

Abdomen banded with wavy grayish brown laterally, with three or four yellow transverse bands towards posterior, yellow margins of brown cardiac area, pattern similar to *Pardosa pseudoannulata*, with seven or eight long white hairs anteriorly, venter yellow. Spinnerets yellow, posterior spinnerets nearly three times longer than anterior, base of oval tubercle with a row of 14–15 brown hairs. Epigynum with a narrow median piece posteriorly that widens apically, guide pocket very narrow, anterior epigynal margin unconnected, spermathecae and duct penis-like. b/St = 0.24, b = 0.30.

Etymology: Species named after the type locality.

Natural history: A single female was collected by an aquatic net passed in between hills of an irrigated wetland ricefield in August. It carried a white, spherical egg cocoon measuring 4.33 mm in diameter.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Patapat, holotype female, 9 August 1984, A.T. Barrion.

Distribution: Philippines.

Pardosa apostoli new species

(Fig. 234a–h)

Description:

Female (Fig. 234a–e): Total length 7.16 mm long. Cephalothorax 3.33 mm long, 2.66 mm wide, 1.80 mm high. Abdomen 3.83 mm long, 2.33 mm wide, 2.40 mm high. Cephalothorax deep brown along subdorsal lateral margins and fovea, except yellow below subdorsal and on the dagger-like median, and black ocular area. Cephalic area not elevated, flat dorsoventrally, similar to thoracic area along fovea. Thoracic area sloped below fovea. Eight eyes in three rows, with AE row straight. Eye diameter (mm): PME = 0.37, PLE = 0.32, AME = 0.17, ALE = 0.10. Eye separation: AME–AME equals one ALE diameter but less than one AME. AME–ALE separation one half ALE diameter. PME–PME separation just less than one PME diameter. PLE–PLE separation 2.7 times PLE diameter. Eye row length (mm) in decreasing order: PLE 1.27, PME = 0.92, AE = 0.71. Clypeus height three times ALE diameter. Sternum yellow and heart-shaped, longer (1.36 mm) than wide (1.2 mm), straight apically tapering to a point posteriorly. Labium wider (0.44 mm) than long (0.32 mm), brown basally and yellow distally, with a slight median cleft. Maxillae yellow, broader, and slightly pointed at apex. Chelicerae reddish brown with gray spots frontally and laterally, with three retromarginal and two promarginal teeth. Legs yellow-brown, mottled gray except tarsi, spination in tibia I = 2 (thin setae) bristles-8-2-2; metatarsus I with one dorsal, long thin erect hair at basal one sixth, one trichobothrium at distal one sixth and another at lower midhalf. Midprolateral and retrolateral areas with one long thin each; leg formula 4123, tarsi three-clawed, each with seven teeth. Pedipalps brown with gray patches, except yellow two thirds of femur.

Length of legs and pedipalp (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.91	1.25	2.58	2.33	1.50	10.57
2	3.00	1.25	2.25	2.25	1.58	10.33
3	2.50	1.25	2.16	2.41	1.25	9.57
4	3.33	1.33	3.25	4.41	2.08	14.40
Pedipalp	1.32	0.64	0.80	–	1.32	4.08

Abdomen brown with white inverted U-shaped band around cardiac area and two or three diverging ovoid-shaped spots medially, scattered yellow spots posteriorly to the anal tubercle, venter uniformly yellow except reddish brown epigynum. Spinnerets yellow ventrally and grayish dorsally. Epigynum with a short guide, narrow guide pocket, b/St = 0.25, b = 0.3.

Male (Fig. 234f–h): Total length 6.83 mm. Cephalothorax 3.5 mm long, 2.66 mm wide, 2.16 mm high. Abdomen 3.33 mm long, 1.66 mm wide, 1.91 mm high. Cephalothorax as in female, fovea as long as length of PME, median band broadest posterior to PLE; eye lengths (mm): AE = 0.67, PME = 1, PLE = 1.35, eye diameters (mm): PLE = PME = 0.32, PME = 0.16, ALE = 0.12. AME–AME separation less than one AME diameter. AME–ALE separation one fourth AME diameter. PLE–PLE separation 2.7 times PLE diameter. Clypeus height one AME diameter, with two black spots below AME–ALE. Sternum yellow, longer (1.60 mm) than wide (1.24 mm), widest between coxae II and III, tapering posteriorly. Labium wider than long, yellow with a strongly recurved apex and straight base. Maxillae yellow, parallel-sided, with a rounded tip bearing scopulae. Chelicerae teeth as in female. Legs yellow except for brown setae and gray to brown hairs. Spination in tibiae I = 0-8(2-2-2-2)-2-2, dorsally with two thin long hair, and IV = 2-8-2-2, ventral apical spines weak, hairs,

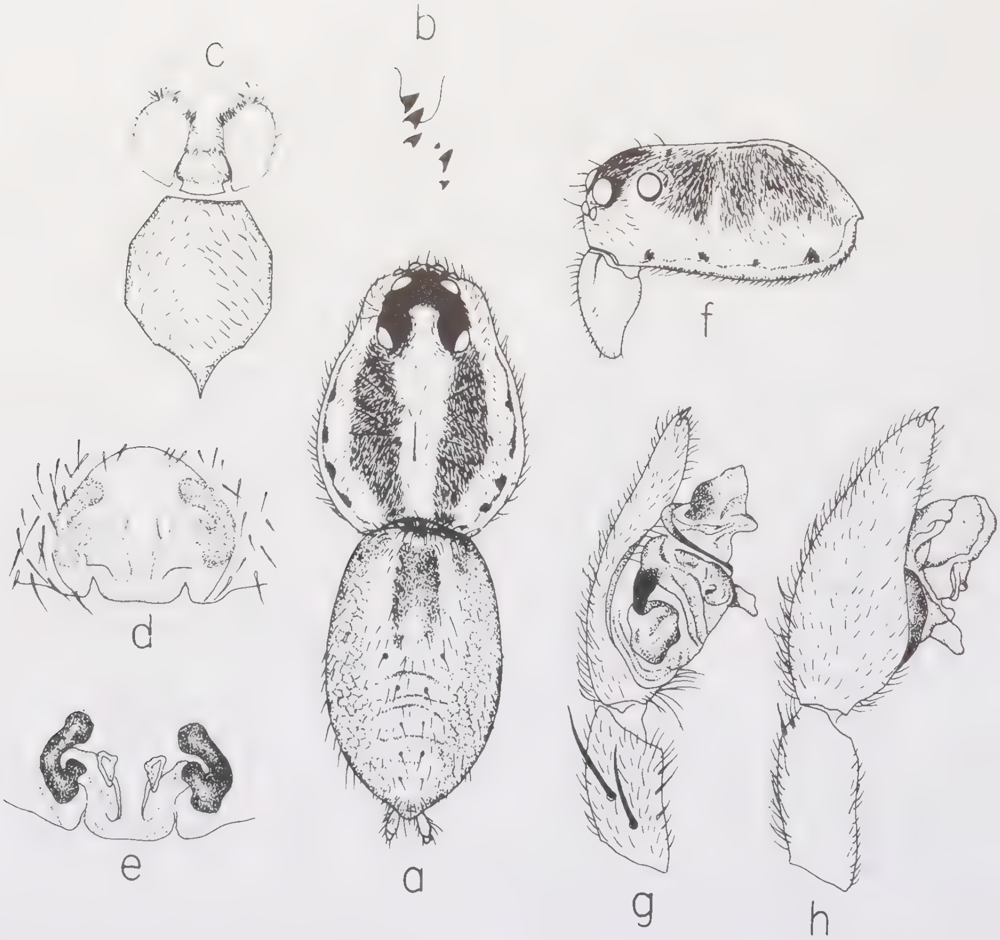


Fig. 234. Female *Pardosa apostoli* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum; and male, side view of carapace (f); and lateral views of tibia and cymbium (gh).

metatarsus I = 0-7-3-3, with a dorsal long thin hair on the basal one seventh and another retrolateral on the basal one third; tarsus three-clawed with seven teeth and a pair of upcurved hairs directed towards tip of claw. Leg formula 4123. Pedipalp mottled gray on yellow femur and patella, cymbium black to brown, a/b = 0.57, apex with two large spines. Embolus transversely coiled around lateral subterminal apophysis and the distal hematodocha. Median apophysis large and rounded with blunt tooth apically. Abdominal pattern as in female, except slender body, longer and slimmer posterior spinnerets.

Etymology: Named after Mr Rodolfo Apostol for his help in the collection of spiders.

Variation: Females range 6.38–7.88 mm in length; intereye length (mm): ALE = 0.68–0.72, PME = 0.84–1.02, PLE = 1.27–1.44; eye diameters (mm): AME = 0.14–0.17, ALE = 0.10–0.12, PME = 0.32–0.37, PLE = 0.320–0.325; clypeus height 0.20–0.36 mm. One female has a yellowish white spot between the two black markings below AE.

Natural history: All specimens except the holotype were collected from a single rainfed wetland ricefield planted in July with a traditional variety Wagwag. They were found on the plant stem, at the bases of the rice hills, or in soil crevices (without standing water). The holotype female was caught 0.2 m above the ground on a rice stem with a pyralid moth *Herpetogramma licarsisalis* (Walker) between its chelicerae in September.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Bangag Vill., holotype male, 23 September 1984, A.T. Barrion; Solana, Iriga, three female paratypes and two immatures, 31 July 1980, A.T. Barrion.

Distribution: Philippines.

Pardosa magkasalubonga new species
(Fig. 235a–h)

Description:

Female (Fig. 235a–e): Total length 6.60 mm. Cephalothorax 3.60 mm long, 2.50 mm wide, 2.20 mm high.

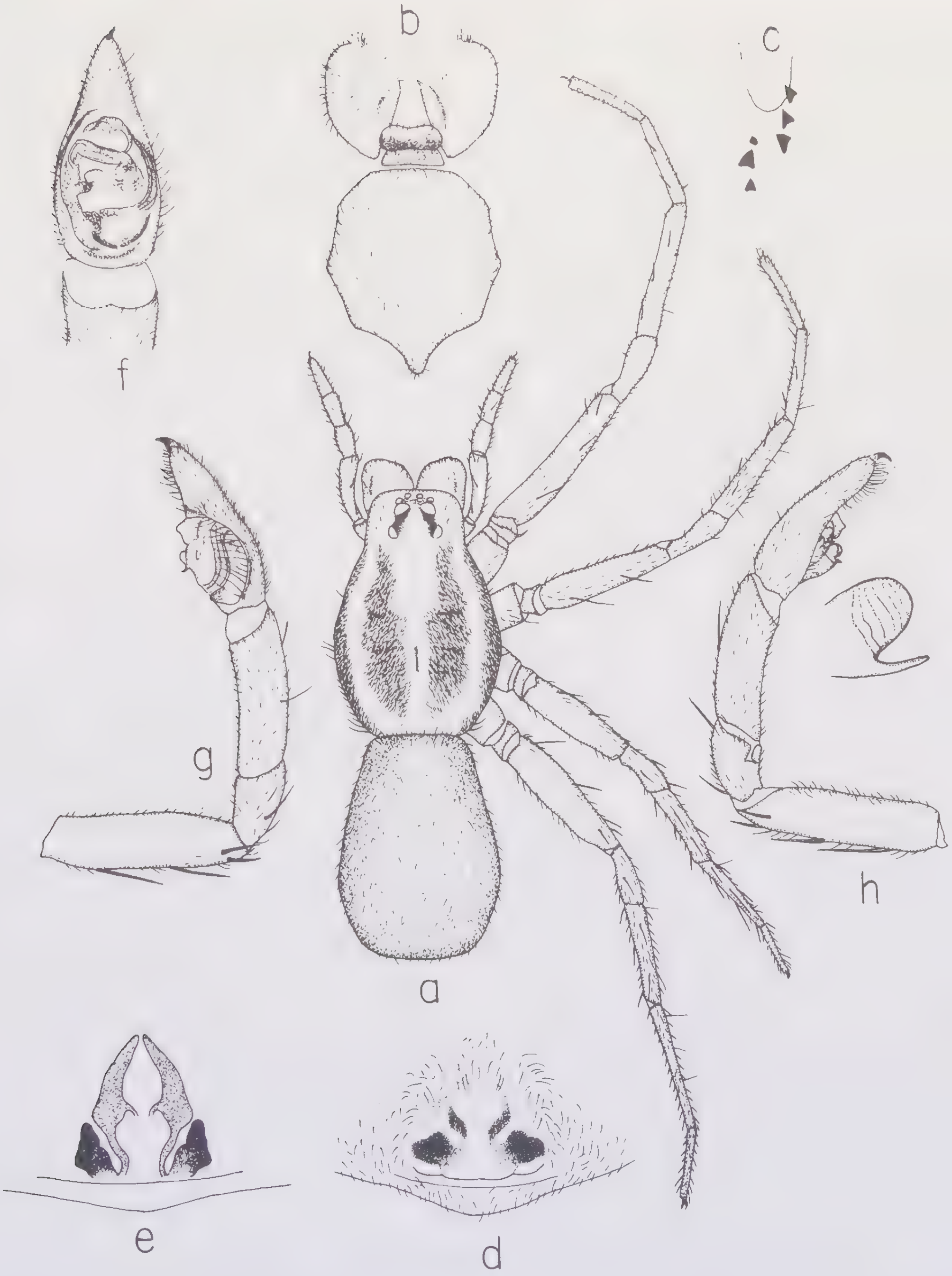


Fig. 235. Female *Pardosa magkasalubonga* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); dorsal (d) and ventral (e) views of epigynum; and male, cymbium (f); and lateral views (gh) of entire pedipalp.

Abdomen 3.00 mm long, 2.00 mm wide, 1.70 mm high. Cephalothorax yellowish brown with black eye area, pale yellow submarginal band, and a rectangular yellow median band extended narrowly to the thoracic area, passing the fovea. Eye diameter (mm): PME = 0.33; PLE = 0.25, AME = 0.18, ALE = 0.12. Eye separation (mm): AME–AME = 0.06, AME–ALE = 0.05, ALE–PME = 0.10, PME–PME = 0.18, PME–PLE = 0.25, PLE–PLE = 0.58, ALE–PLE = 0.55. Eye row length (mm): AE = 0.73, PME = 0.80, PLE = 0.98. MOQ 1.86 times wider behind than in front, length 1.27 times longer than anterior width (0.43 mm). Clypeus height small, about 0.38 AME diameter. Sternum yellowish brown, clothed uniformly with brown hairs, longer (1.50 mm) than wide (1.20 mm), and subglobular. Labium reddish brown with yellow anterior margin. Maxillae pale reddish brown, with a subbasal and a subapical yellow spot, converging apically. Chelicerae reddish brown, with promarginal scopulae and fine long hairs posterior to three retromarginal teeth. Promargin with three teeth, apical one the smallest. Legs moderately long, yellow-brown except reddish brown in metatarsi and tarsi. Spination in femora I = 3-0-2-0 and IV = 3-0-2-1, in femur I apicodorsal spine weak and subapico-prolateral spines in a pair and close to each other; tibiae I = 0-6(2-2-2)-1-0 and IV = 2-6-2-2; metatarsi I = 0-5(2-2-1)-1-1 and IV = 0-7(2-2-2-1)-3-3. Tibia I as long as femur III. Metatarsus I/tarsus I = 1.42. Tarsi three-clawed, each superior claw with five or six teeth in leg I and inferior claw has none. Leg formula 4123. Pedipalp slightly less than combined length of femur I and patella I, brown except yellow femur. Tarsus single-clawed with four teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.35	1.20	2.00	1.70	1.20	8.45
2	2.25	1.00	1.80	1.55	1.15	7.75
3	2.00	0.90	1.50	1.80	1.00	7.20
4	3.00	1.30	2.50	3.05	1.40	11.25
Pedipalp	1.20	0.55	0.80	–	0.90	3.45

Abdomen yellowish brown without markings, widest in posterior one third and truncate anteriorly and posteriorly. Spinnerets underneath, not visible dorsally. Epigynum with a pair of anteriorly converging hoods, ratio of hoods a/b = 0.5 (a = width of median septum at constricted point, b = width of median septum of epigynum). Median septum moderately constricted in the middle, ratio of a/b = 1.00, spermathecae elongate, thumb-like, and parallel to each other longitudinally.

Male (Fig. 235f–h): Total length 6.30 mm. Cephalothorax 3.10 mm long, 1.90 mm wide, 2.00 mm high. Abdomen 3.20 mm long, 2.00 mm wide, 2.20 mm high. Cephalothorax yellow-brown, with a pale yellow median and submedian band, and black eye margins forming a U-shaped band in PE row. Eye diameter (mm): PME = 0.30, PLE = 0.25, AME = 0.15, ALE = 0.10. Eye separation (mm): AME–AME = 0.04, AME–ALE = 0.03, ALE–PME = 0.08, PME–PME = 0.12, PME–PLE = 0.18, PLE–PLE = 0.12, PLE–ALE = 0.46. MOQ 1.96 times wider behind than in front, length 1.36 times longer than anterior width (0.33 mm). Clypeus height very small, just one third AME diameter. Sternum yellow, uniformly clothed with erect brown setae, longer (1.35 mm) than wide (1.03 mm), truncate anteriorly, and tapering posteriorly in front of coxae IV. Labium yellowish brown with yellow apical margin, as long as wide to slightly wider than long. Maxillae yellow, broader apically and narrowed basally, moderately converging apically. Chelicerae yellowish brown with a thick promarginal scopulae, promargin and retromargin each with three teeth. Legs yellow with strong spines except dorsum of tibiae and metatarsi I to III. Spination in femora I = 3-0-2-2 and IV = 3-0-2-1; tibia I = 0-6(2-2-2)-2-1 or 0-6(2-2-2)-1-1; metatarsi I = 0-7-2-2 and IV = 0-8(1-2-2-3). Femur I with a pair of subapical prolateral spines. Femur II as long as tibia I. Metatarsus I/tarsus I = 1.31. Tarsi three-clawed, each superior claw with ten and 13 teeth, the 13 teeth in one superior claw in two rows of eight and five teeth. Inferior claw very short and bluntly rounded apically. Pedipalp yellow, as long as combined length of femur I and patella I. Tibia without spines, only moderately thick hairs ventrally and dorsally. Median apophysis with a sclerotized slender tooth basally and rounded process anteriorly. Cymbium with a slender hairy apical half with a large spine at apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.45	1.05	2.20	1.90	1.45	9.05
2	2.20	1.10	1.80	1.70	1.30	8.10
3	2.10	0.90	1.75	1.95	1.10	7.80
4	2.85	1.10	2.50	3.20	1.50	11.15
Pedipalp	1.25	0.50	0.80	–	0.95	3.50

Abdomen yellowish brown with a dark brown anterior margin. Venter and laterals pale yellow-brown with short fine hairs. Spinnerets moderately diverging, anterior pair longer and more robust than the posterior pair.

Etymology: Derived from converging anterior hood of epigynum, in Tagalog 'magkasalubong' + a.

Natural history: All specimens were collected in January by pitfall traps set inside an upland slash-and-burn ricefield adjacent to a small stream.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill. holotype female, 4 January 1985, A.T. Barrion and M. Perez, two paratype males (one without abdomen) and one paratype female, same data as holotype.

Distribution: Philippines.

Pardosa caliraya new species
(Fig. 236a–i)

Description:

Female: Total length 7.60 mm. Cephalothorax 3.00 mm long, 2.30 mm wide, 2.10 mm high. Abdomen 4.60 mm long, 2.40 mm wide, 2.80 mm high. Cephalothorax brown except broad yellow median and moderately narrow submarginal bands, black U-shaped eye area and eye margins. Eye diameter (mm): PME = 0.34, PLE = 0.28, AME = 0.15, ALE = 0.13. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.04, ALE–PME = 0.10, PME–PME = 0.33, PME–PLE = 0.36, PLE–PLE = 0.36, PLE–PLE = 0.96, ALE–PLE = 0.64. Eye row length (mm): AE = 0.64, PME = 0.93, PLE = 1.28. MOQ 2.66 times wider behind than in front (0.35 mm), length 1.86 times longer than anterior width.

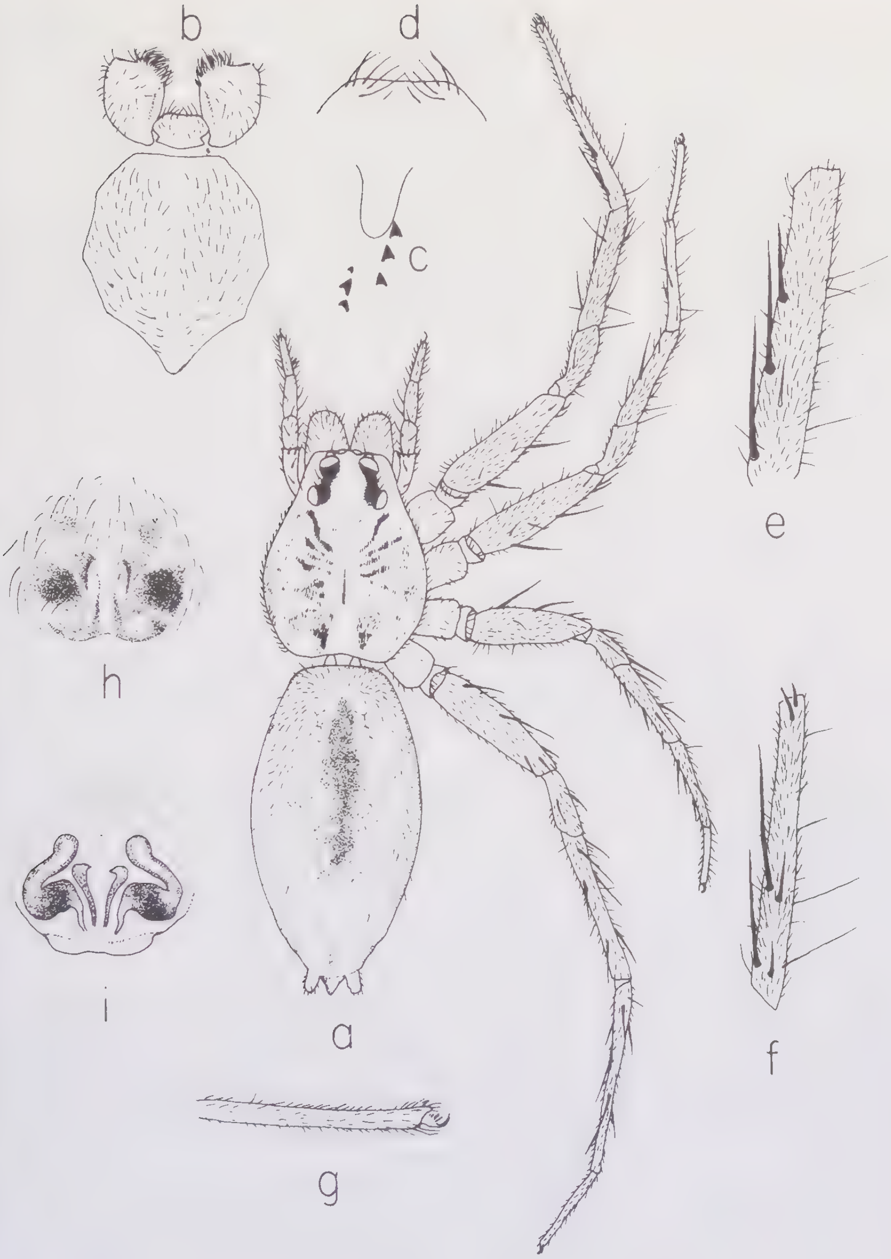


Fig. 236. Female *Pardosa caliraya* n. sp. (a), sternum, labium, and maxillae (b); cheliceral teeth (c); apex of labium (d); side view of tibia I (e), metatarsus II (f), and tarsus I (g), and dorsal (h) and ventral (i) views of epigynum.

Clypeus height as large as or slightly larger than one AME diameter. Sternum yellow, with sparse erect brown hairs, longer (1.33 mm) than wide (1.15 mm), truncate anteriorly and shortly tapered in front of coxae IV. Labium yellow in apical one half and pale brown to yellowish brown in basal one half, wider (0.35 mm) than long (0.30 mm), distal end truncate, with 12 hairs. Maxillae yellow, narrowed basally, broadened apically, and semitruncate on the lateral side of the oblique brown scopulae. Chelicerae yellow, strong, and robust. Promargin with three teeth, apical tooth minute. Retromargin with three large teeth. Legs uniformly yellow, relatively long, and bear long slender spines. Spination in femora I = 3-0-2-3 and IV = 3-0-2-1; tibiae I = 2 bristles-7(2-2-1-2)-2-2 and IV = 2-6-2-2; metatarsi I = 0-7(2-2-3)-2-2 and IV = 0-8(1-1-1-1-1-3)-3-3. Metatarsus I/tarsus I = 1.5. Tarsi three-clawed, each superior claw bears six teeth in leg I. Leg formula 4123. Pedipalp as long as combined length of metatarsus I and tarsus I, tarsus bears a claw with three teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.40	1.10	2.30	1.95	1.30	9.05
2	2.30	1.00	2.05	2.00	1.10	8.45
3	2.00	0.85	1.80	2.05	1.15	7.85
4	2.70	1.15	2.75	3.65	1.65	11.90
Pedipalp	1.50	0.70	-	1.00	3.25	6.45

Abdomen uniformly brown with yellow, cardiac area and anterior margins with a dense mat of brown hairs. Venter yellow with a black ventrolateral band posteriorly, close to the diverging spinnerets. Epigynum bears a T-shaped median septum, transverse process moderately concave posteromedially, and the ratio of a/b = 1.50, hood diverging and oblique; spermathecae globular, converging, and bears slender copulatory tube.
Etymology: Derived after type locality.
Natural history: The specimens were all collected by D-Vac suction machine from upland ricefields in July.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Caliraya, Manipon Vill., holotype female, 7 July 1986, A.T. Barrion.
Distribution: Philippines.
Remarks: A subadult female and a spiderling were also collected in August.

Pardosa daniloi new species
(Fig. 237a–h)

Description:
Female (Fig. 237a–e): Total length 7.44 mm. Cephalothorax 3.44 mm long, 2.52 mm wide, 2.00 mm high. Abdomen 4.00 mm long, 2.40 mm wide, 2.00 mm high. Cephalothorax as in male except size and eye measurements. Intereye lengths (mm) PLE = 1.04, PME = 0.80, AE = 0.72. Eye diameters (mm): PME = 0.36, PLE = 0.20, AME = 0.16, ALE = 0.14. AME–AME separation subequal to clypeus height. PME–PME separation one half PME diameter. PLE–PLE separation 2.8 times PLE diameter. Sternum, labium, and chelicerae as in male. Chelicerae brown, each with three retromarginal and two or three promarginal teeth. Legs yellow-brown with brown spines, spination formula in tibia I = 0-6-1-0, tibia II = 0-5-1-0, basal ventral spine single, tibia IV = 2-6-2-2, inner spines of the pair short; tarsi three-clawed with six or seven teeth. Leg formula 4132. Pedipalp single-clawed with four teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.48	1.28	2.08	1.80	1.56	9.20
2	2.20	1.20	1.84	1.80	1.48	8.52
3	2.24	1.12	1.84	2.04	1.40	8.64
4	2.88	1.28	2.68	3.12	1.76	11.72
Pedipalp	1.28	0.64	0.80	–	1.08	3.80

Male (Fig. 237f–h): Total length 5.05 mm. Cephalothorax 3.11 mm long, 2.22 mm wide, 1.56 mm high. Abdomen 1.94 mm long, 1.44 mm wide, 1.28 mm high. Cephalothorax brown, hirsute, narrowed towards cephalic area with parallel sides, widened between coxae II–III, nearly truncated posteriorly. Ocular area black, U-shaped. Median band pale yellow, broad between brown and long fovea, and PE enclosed with two pairs of brown spots, seven or eight striae radiate from fovea, cephalic area not elevated. Eight eyes in three rows, AE row recurved and PE row strongly recurved. Intereye widths (mm): PLE = 0.92, PME = 0.70, AE = 0.60. Eye diameter (mm): PME = 0.32, PLE = 0.22, AME = 0.14, ALE = 0.10. Eye separation (mm): AME–AME = 0.07, one half AME diameter, AME–ALE less than one half ALE diameter, PME–PME = 0.16, PLE–PLE 2.8 times PLE diameter. Clypeus concave below AME, cleft after ALE, height 0.71 AME diameter or as long as one ALE diameter. Sternum yellow-brown, hirsute, heart-shaped, with slight indentions opposite coxae II–IV, anterior end straight to slightly recurved. Labium as long as broad, apex with a median notch and above midlength of the short maxillae, basal one third reduced and parallel-sided, lateroapical border yellow, forming a brown triangular central plate. Chelicerae brown, each with three retromarginal and three promarginal teeth. Fangs reddish brown, bases elongated, each with a small tubercle after the inwardly curved portion. Legs same color as cephalothorax. Spination in tibia I = 0-6-1-1, its basal one fourth with one thin long dorsal bristle, and tibia IV = 2-5-2-2, with one short ventrobasal spine; metatarsus I = 0-6-2-2, midhalf of metatarsus with swelling. Metatarsus I/tarsus I = 1.12. Leg formula 4123. Pedipalps shorter than femur I plus patella I, yellow and brown, each with a short but robust apical spine, terminal apophyses grooved basally. Median apophysis subtriangular with a long ventral process.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.44	1.14	2.04	1.88	1.68	9.18
2	2.12	1.08	1.84	1.72	1.44	8.20
3	2.12	1.00	1.72	1.88	1.20	7.92
4	2.72	1.12	2.40	2.72	1.64	10.60
Pedipalp	1.20	0.50	0.80	–	0.90	3.40

Abdomen yellow with brown to gray, narrower than cephalothorax, basally with five to seven transverse and irregular striations or bands, venter yellow, book lungs deep brown and set anterolaterally underneath coxa IV. Spinnerets not visible above, posterior pair those anterior pair in diameter.
Variation: Males range 4.58–5.05 mm in length, carapace 2.75–3.11 mm long, 2.22–2.75 wide, abdomen 1.83–1.94 mm long, 1.16–1.44 wide. Intereye widths (mm) AE 0.53–0.60, PME 0.60–0.70, PLE 0.74–0.92, eye diameters (mm): AME 0.14–0.17, PME 0.24–0.32, PLE 0.20–0.22. Midtibia IV with or with swelling (due probably to a regenerating leg of the holotype). Females range 5.83–7.66 mm in length, carapace 3.00–3.48 mm long, 2.16–2.56 mm wide. Abdomen 3–4 mm long, 2.10–2.40 mm wide.
Etymology: Named after Mr Danilo Amalin for his endless support in the illustrations.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 18 July 1984, A.T. Barrion, one paratype male, same data as holotype, two females, 22 July 1984, four females, 5 August 1984, four females, 12 September 1984, A.T. Barrion.
Distribution: Philippines.

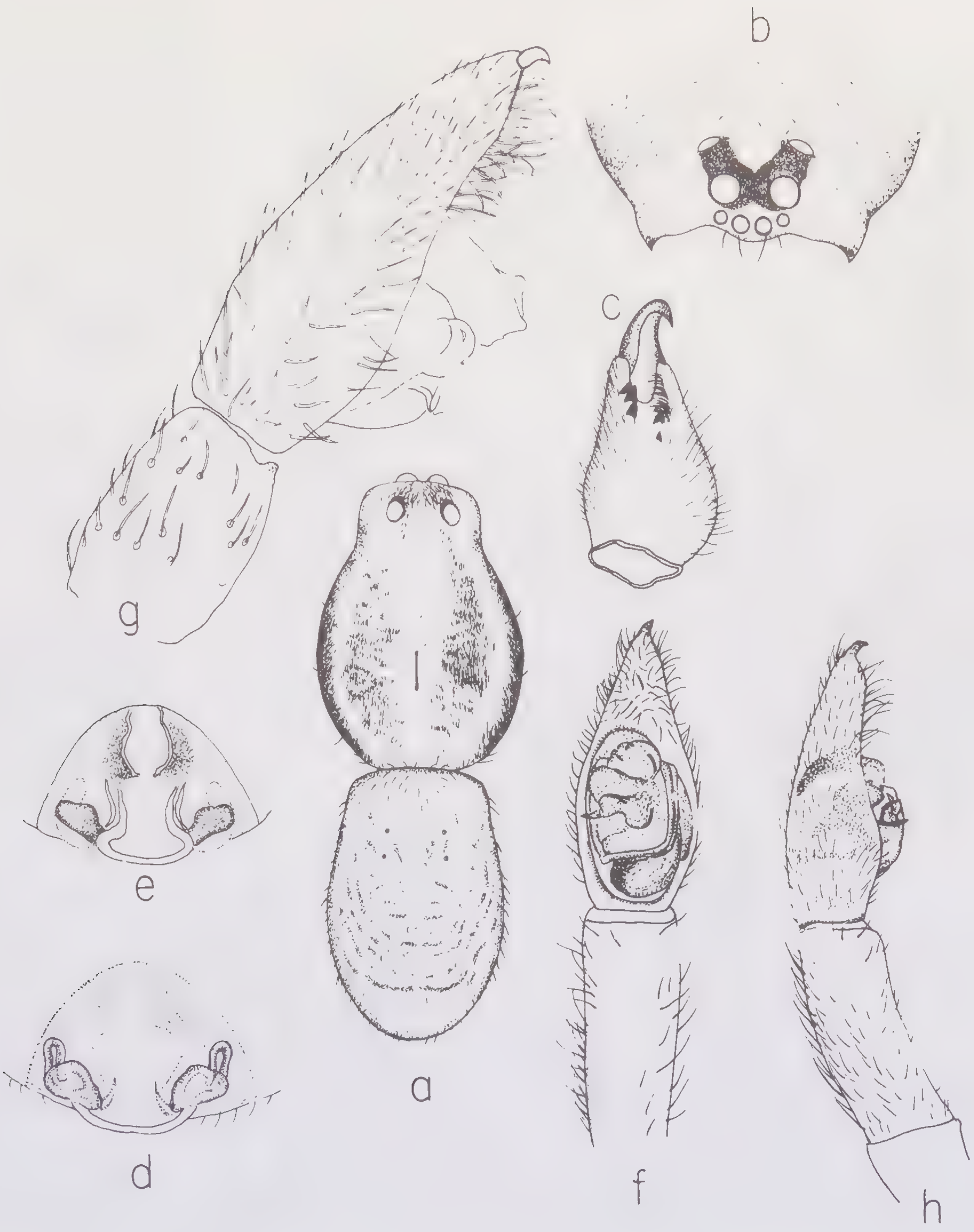


Fig. 237. Female *Pardosa daniloi* n. sp. (a); frontal view of head (b); chelicera (c); and dorsal (d) and ventral (e) views of epigynum; and male, ventral (f) and retrolateral (gh) views of pedipalp.

Pardosa sacayi new species
(Fig. 238a–l)

Description:

Male: Total length 6.30 mm. Cephalothorax 3.35 mm long, 2.40 mm wide, 1.80 mm high. Abdomen 2.95 mm long, 1.60 mm wide, 1.20 mm high. Cephalothorax brownish yellow with narrow and pale submarginal bands and yellow median band, broadest anterior to fovea, reduced to a narrow longitudinal line towards mid-PLE, black eye margins, and U-shaped PE area. Eye diameter (mm): PME = 0.30, PLE = 0.25, AME = 0.20, ALE = 0.10. Eye separation (mm): AME–AME = 0.05, AME–ALE = 0.03, ALE–PME = 0.08, PME–PME = PME–PLE = 0.18, PLE–PLE = 0.60, ALE–PLE = 0.43. MOQ 1.75 times wider behind than in front, length 1.4 times longer than anterior width (0.40 mm). Clypeus height small, 0.40 AM diameter.

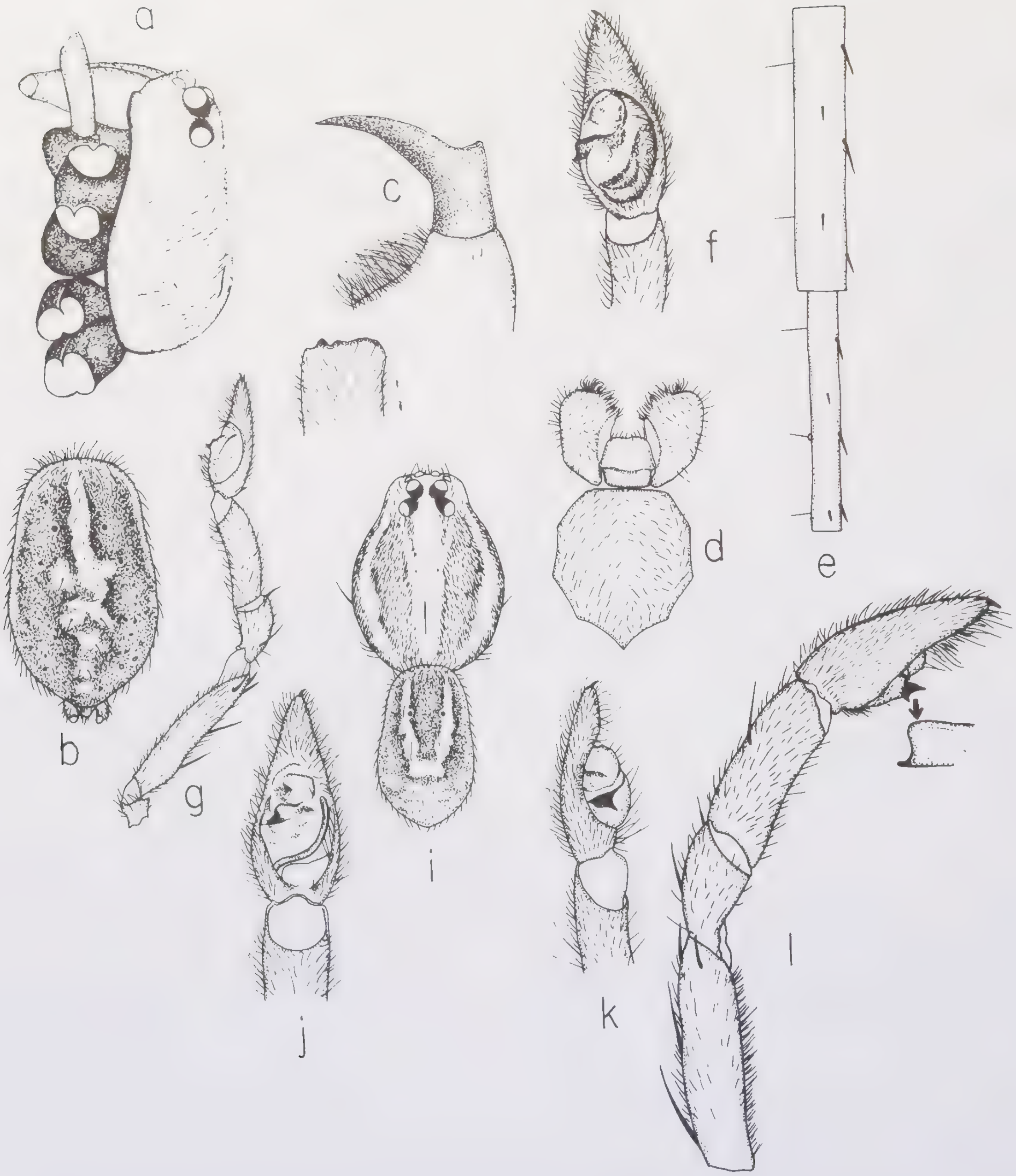


Fig. 238. Male *Pardosa sacayi* n. sp., side view of cephalothorax (a); abdominal dorsum (b); fang and part of chelicera (c); sternum, labium, and maxillae (d); side view of tibia I and metatarsus I (e); ventral (f) and retrolateral (g) views of holotype's pedipalp; dorsal tip of holotype pedipalp's tibia (h); paratype habitus (i); and ventral (j) and lateral (kl) views of paratype pedipalp.

Sternum yellow, subovate, truncate anteriorly, and pointed posteriorly, and marginal setae stronger than median setae. Labium pale reddish brown, similar to maxillae and chelicerae, slightly longer (0.40 mm) than broad (0.38 mm). Maxillae slightly C-shaped, basally narrowed, and relatively broad in the converging apices. Chelicerae with three teeth each in promargin and retromargin. Fang bears a tooth in outer basodorsal one half. Legs yellow, with pale gray annulations in femora, and spines. Spination in femora I = 3-0-2-2, II = III = 3-0-2-3, IV = 3-0-2-1; tibiae I = 0-6-2-2, II = 0-6-2-2, IV = 0-6(2-1-1-2)-2-2; metatarsus I = 0-7(2-1-1-3)-2-2; dorsobasal and dorsoapical bristles of tibia at 0.22 and 0.78 its length, respectively; dorsobasal and dorsoapical

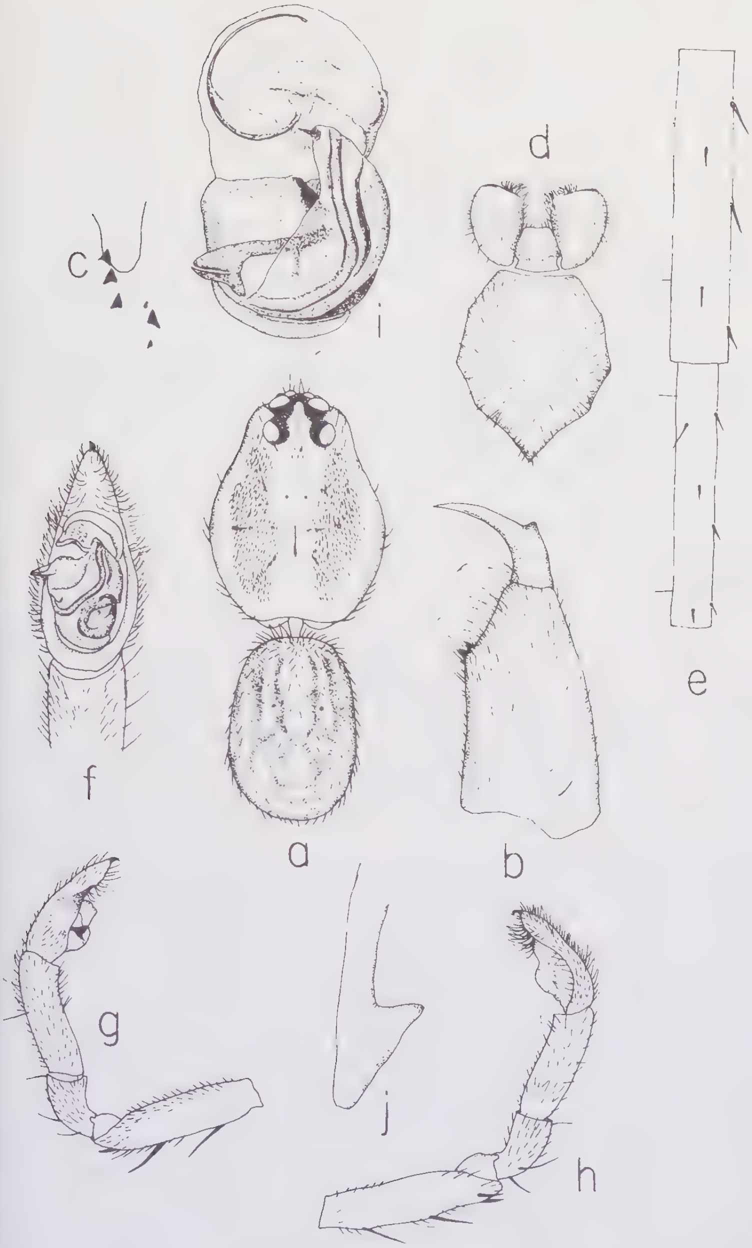


Fig. 239. Male *Pardosa hawakana* n. sp. (a); chelicera (b); cheliceral teeth (c); sternum, labium, and maxillae (d); lateral view of tibia I and metatarsus I (e); ventral (f) and lateral (gh) views of pedipalp; expanded palpal organ (i); and median apophysis in ventral view (j).

bristles of metatarsus I at 0.14 and 0.90 its length, respectively. Metatarsus I/tarsus I = 1.34, TmI = 0.61. Leg formula 4123. Pedipalp yellow, slightly longer than metatarsus IV. Median apophysis deeply concave with two processes in prolateral view, ventrally the two processes at midpoint of the retrolaterally projected apex of median apophysis, base broadly rectangular. Embolus short and half-coiled anterior to apophysis. Cymbium with a large apical spine.

Abdomen brown with an elongate yellow cardiac area, a pair of spherical brown spots in apical one third, two short elongate yellow spots posterior to cardiac, two H- or X-shaped yellow bands at midhalf, and two subglobular yellow spots subposteriorly. Anterior margin with a thick mat of brown to black setae. Laterals yellow except mottled brown posterior one half. Venter uniformly yellow. Spinnerets equally long and yellow with brown hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	1.05	2.35	2.15	1.60	9.75
2	2.52	1.20	2.10	2.00	1.50	9.32
3	2.45	1.15	2.00	2.04	1.32	8.96
4	3.20	1.30	3.00	3.65	1.65	12.80
Pedipalp	1.30	0.50	0.90	–	1.00	3.70

Etymology: Named after Mariano Sacay.

Natural history: The holotype male was collected from a newly irrigated ricefield in July and two paratype males also from ricefields in October.
Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Iriga Vill., holotype male, 28 July 1980, A.T. Barrion; Isabela Prov., Alicia, two paratype males, 23 October 1981, A.T. Barrion
Distribution: Philippines.
Remarks: The paratypes from Isabela Province have a U-shaped yellow band in the abdomen and wider bands in the cephalothorax.

Pardosa hawakana new species

(Fig. 239a–j)

Description:
Male: Total length 6.40 mm. Cephalothorax 3.50 mm long, 2.50 mm wide, 2.00 mm high. Abdomen 2.90 mm long, 2.80 mm wide, 1.90 mm high. Cephalothorax light brown, with yellow median and submedian bands, black eye areas, and reddish brown fovea, with a pair of brown spots in its anterior. Eye diameter (mm): PME = 0.28, PLE = 0.24, AME = 0.15, ALE = 0.11. Eye separation (mm): AME–AME = 0.06, AME–ALE = 0.05, ALE–PME = 0.13, PME–PME = 0.25, PME–PLE = 0.20, PLE–PLE = 0.63, ALE–PLE = 0.54. MOQ 1.85 times wider behind than in front (0.40 mm), length 1.38 times longer than anterior width. Clypeus height small, 0.66 of AME diameter. Sternum yellow, smooth medially and hairy marginally, longer (1.55 mm) than wide (1.30 mm), truncate anteriorly, and tapers posteriorly in front of coxae IV. Labium yellow, anteromedially concave, and wider (0.45 mm) than long (0.30 mm). Maxillae yellow, wider anteriorly with converging scopulae and narrow posteriorly. Chelicerae with three promarginal and three retromarginal teeth, narrowed apically after the teeth, fang with a subbasal outer indention, producing a tooth-like process. Legs yellow, long, and slender. Spination in femur I = 3-0-2-3, distal prolateral spines near each other, and basal and median spine equally long, with basal tip almost reaching median spine. Femur IV = 3-0-1-2. Tibiae I = 0-6-2-2 and IV = 2-6-2-2. Dorso-apical and dorsobasal bristles of tibia I at 0.76 and 0.14 of its length, respectively. Metatarsi I = 0-7(2-2-3)-2-2 and IV = 0-8(2-1-2-3)-3-3. Metatarsus I/tarsus I = 1.33. Dorsobasal and dorsoapical bristles of metatarsus I at 0.13 and 0.87 of its length, respectively. Tarsi three-clawed, each superior claw with seven teeth each in leg I, and inferior claw toothless. Leg formula 4123. Pedipalp yellow, total length slightly less than femur IV plus patella IV. Tibia with a thin median doral spine. Median apophysis triangular in ventral view and elongate basally. Embolus relatively short and occurs below palea. Cymbium bears a large apical spine.

Abdomen subglobular, brown with yellow patches, anterior part with a dense mat of brown setae, and posterior end dark gray. Venter yellow except light brown posterior end and book lung.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.70	1.10	2.50	2.20	1.65	10.15
2	2.52	1.00	2.00	2.30	1.25	9.07
3	2.45	1.16	2.00	2.30	1.20	9.11
4	3.30	1.20	3.00	3.70	1.65	12.85
Pedipalp	1.40	0.65	0.95	-	1.05	4.05

Etymology: Derived after the handle-like feature of fang base, in Tagalog 'hawakan' + a.
Natural history: The holotype male was caught from a Malaise trap base set in the middle of a weedy cornfield in September.
Material examined: PHILIPPINES: *Mindanao Is.*, Agusan del Sur, Claveria, Kalingagan, holotype male, 15 September 1987, A.T. Barrion.
Distribution: Philippines.

Pardosa warayensis new species

(Fig. 240a–e)

Description:
Male: Total length 6.40 mm. Cephalothorax 3.20 mm long; 2.60 mm wide, 2.10 mm high. Abdomen 3.20 mm long, 1.60 mm wide, 1.80 mm high. Cephalothorax dark brown with black eye margins and yellow moderately broad median and narrow submarginal bands, edges of both bands irregularly shaped and anterior to median band, cross-like. Eye diameter (mm): PME = 0.38, PLE = 0.30, AME = 0.15, ALE = 0.13. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.05, ALE–PME = 0.13, PME–PME = 0.29, PME–PLE = 0.31, PLE–PLE = 0.93, ALE–PLE = 0.68. Eye row length (mm): AE = 0.64, PME = 0.93, PLE = 1.24. MOQ 2.66 times wider behind than in front (0.35 mm), length 1.69 times longer than anterior width. Clypeus dark brown with two concave transverse yellow stripes at mid-half adjacent to AME; height 2.5 times AME diameter. Sternum yellowish brown with a black ovoid median band, longer than wide. Labium reddish brown with yellow truncate apex, slightly wider than long. Maxillae yellow, narrowed posteriorly, and converging posteriorly. Chelicerae dark brown frontally, except yellow longitudinal band adjacent to boss. Promargin with two teeth and three in retromargin. Legs yellowish brown with gray annulations in femora. Spination in femora I = 3-0-2-3 and IV = 3-0-2-1; tibiae I = 2 bristles-6-2-2 and IV = 2-6-2-2; metatarsi I = 0-7(2-2-3)-3-3 and IV = 0-8(1-1-1-1-1-3)-3-3. Metatarsus I has one long dorsobasal bristle, metatarsus I/tarsus I = 1.53. Leg formula 4123. Pedipalp slightly shorter than combined length of patella II and tibia II. Median apophysis strongly transverse, thin, subapically curved posteriorly, apex slightly bifurcate, forming two rounded lobes. Distal hematodocha apically triangular. Cymbium bears two stout apical spines.

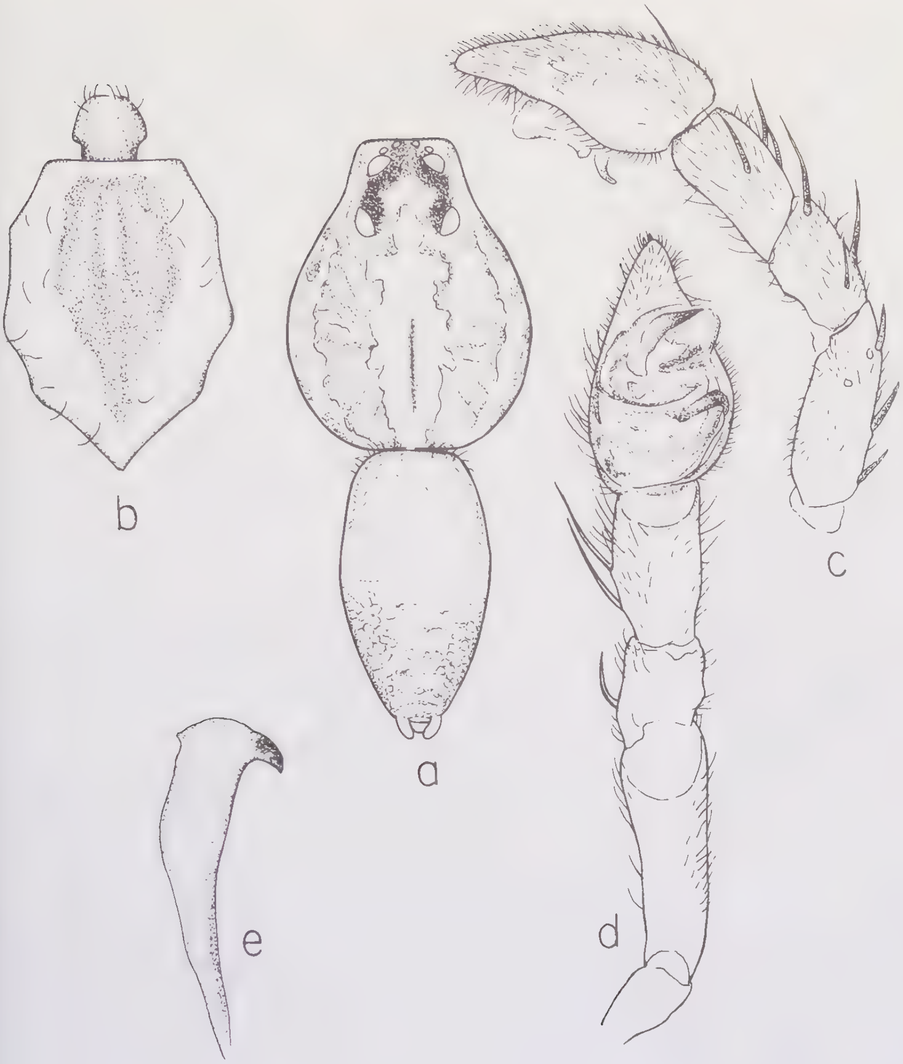


Fig. 240. Male *Pardosa warayensis* n. sp. (a); labium and sternum (b); retrolateral (c) and ventral (d) views of pedipalp; and median apophysis (e).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	1.10	2.50	2.30	1.50	10.00
2	2.50	1.00	2.30	2.20	1.35	9.35
3	2.20	0.90	2.10	2.40	1.10	8.70
4	3.25	1.10	2.95	3.40	1.75	12.45
Pedipalp	1.30	0.50	0.75	–	1.40	3.95

Abdomen yellow-brown, dorsoposterior one half brown but mottled yellow, anterior margins with a row of brown spines, posterior tip bears a gray to black band, similar to lateral margins of anal tubercle. Anterior spinnerets yellow, as long as posterior spinnerets. Basal segment of anterior spinnerets grayish yellow.

Etymology: Named after the people of the type locality.

Natural history: Handpicked by a farmer from his ricefield in November.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Oton, holotype male without right leg IV, 10 November 1978, B. Lucasio.

Distribution: Philippines.

Pardosa santamaria new species

(Figs. 241a–g)

Description:

Male: Total length 4.96 mm. Cephalothorax 2.80 mm long, 1.48 mm wide, 1.66 mm high. Abdomen 2.16 mm long, 2.20 mm wide, 1.38 mm high. Cephalothorax dark reddish brown, except black ocular area and margins of carapace, narrow distally, broad proximally, and widest between coxae II and III. Fovea distinct, long, and black, subequal to PME–PME separation, two to four pale striae radiating towards fovea. Eight eyes in three rows, intereye lengths (mm) in decreasing order: PLE = 1.12, PME = 0.88, AE = 0.62. Eye diameter (mm): PME = 0.34, PLE = 0.28, AME = 0.16, ALE = 0.08. Eye separation: AME–AME twice AME–ALE, less one AME diameter, ALE–AME one half AME–AME or one fifth PME–PME, PLE–PLE 2.5 times PLE diameter. Clypeus height large, more than one AME diameter. Sternum heart-shaped, longer (1.30 mm) than wide (1.12

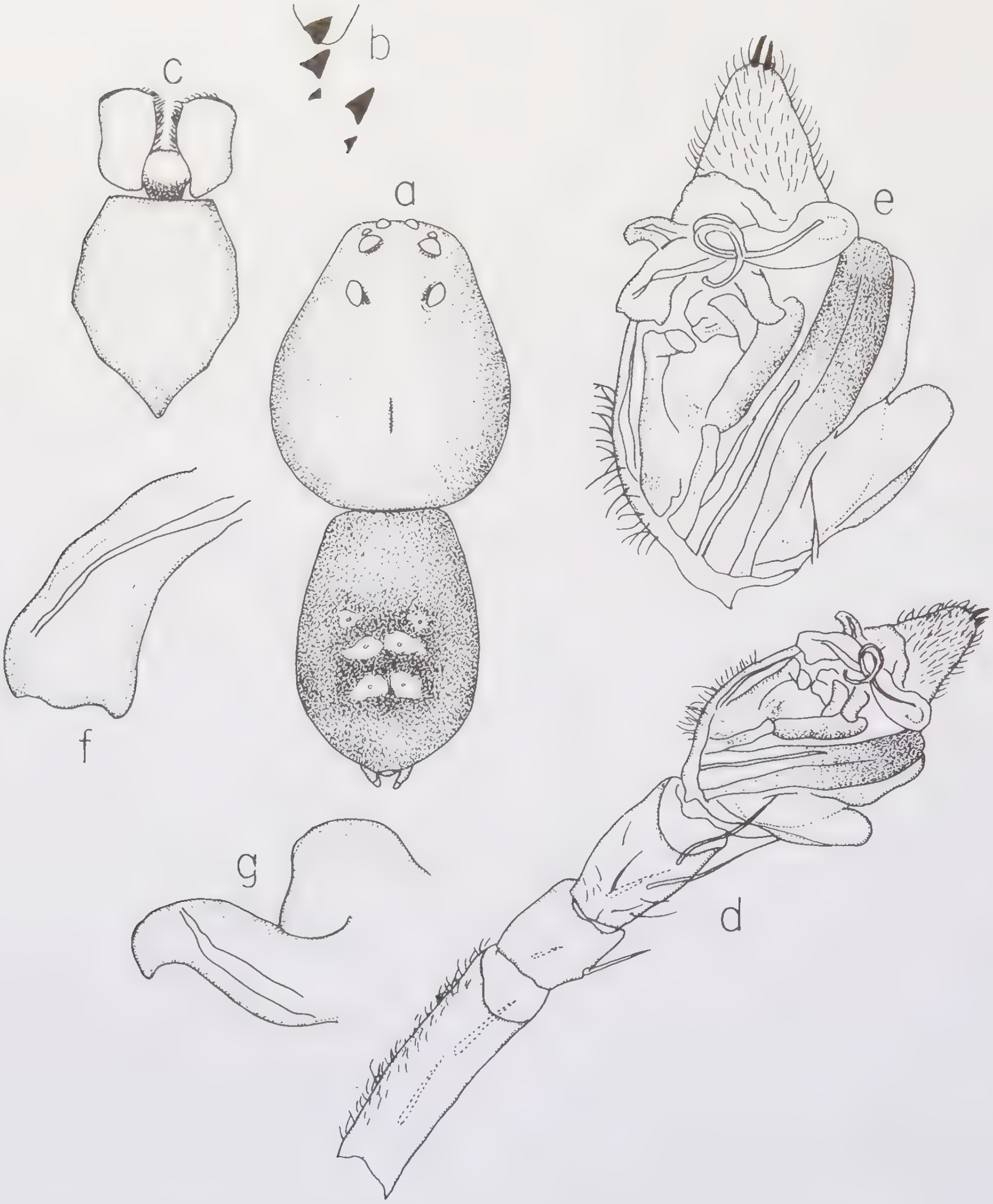


Fig. 241. Male *Pardosa santamaria* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); ventral view of entire palp (d); expanded palpal organ (e); apex of conductor (f); and terminal apophysis (g).

mm), black, apical section truncated, and basal section pointed, indention opposite coxae slight to absent, clothed with white hairs when viewed laterally. Labium dark reddish brown with yellow distal end, one third longer than broad, height barely one third of maxillae, with yellow-brown scopulae at its inner and distal ends. Chelicerae deep brown to grayish brown, small, and vertical, each with two promarginal and three retromarginal teeth. Legs blackish brown, yellowish gray coxae, gray mottles on tibiae minimal to absent. Spination in tibia I = 0 (with one long thin diagonal hair on distal one third)-6-2-2; metatarsus I = 0 (except one long thin erect hair at midlength)-6-3-3, prolateral with four long thin hairs, retrolateral with five, venter with three; tarsus I with one pair of medium-length dorsal hairs distally and one each long thin hairs on the proximal one third of the prolateral and retrolateral, inner pair of ventral spines of tibiae I and II less superior than outer pairs; tibia II with two dorsal long thin hairs, tibiae III and IV = 2-6-2-2; metatarsi III = 0-5-3-3, with a long thin erect hair proximally and one trichobothrium distally on the dorsal surface; metatarsus IV with five alternating ventral and dorsal spines, r = 1 and p = 1. Tarsi three-clawed, each with four teeth. Leg formula 4123. Pedipalp with white patellae and tibiae, brown femur, and deep brown cymbium with two spines apically.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.20	0.96	2.04	1.96	1.40	8.56
2	2.00	0.92	1.72	1.80	1.36	7.80
3	1.84	0.80	1.56	2.08	1.14	7.42
4	2.62	1.00	2.36	3.52	1.72	11.22

Grayish brown abdomen mottled with yellow dots dorsally, with three pairs of elongated yellow spots medially (below cardiac area) and two pairs along the margins of cardiac area, each spot with a brown central dot, venter grayish with a row each of eight circular brown spots on the lateral margins. Spinnerets brown, anterior pair more robust and cylindrical than those posterior.

Etymology: Named after the type locality.

Natural history: The single male was handpicked in the morning from a pile of scythe-harvested irrigated wetland rice in one undrained ricefield at the foot of a mountain in January. The male was running away from the field being harvested towards the canal with males and females of *Pardosa pseudoannulata.*

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Sta. Maria, holotype male, 12 January 1982, M. Perez.

Distribution: Philippines.

Remarks: The white color of the patella and tibia is similar to *P. birmanica* Simon; however, *P. santamaria* has a straight distal process on median apophysis (two apical spines in the cymbium), with a pointed end, and bears no triangular tubercle in the midlateral area of median process.

Pardosa mabinii new species

(Fig. 242a–e)

Description:

Male: Total length 6.10 mm. Cephalothorax 3.30 mm long, 2.70 mm wide, 2.20 mm high. Abdomen 2.80 mm long, 2.60 mm wide, 1.95 mm high. Cephalothorax brown with a broad yellow median band, forking anterior to fovea, forming a pair of yellow-brown sausage-shaped parallel spots anteriorly between PLE, a yellow spot posterior to PME, and a triangular brown band between two forms of spots. Submarginal band distinct. Eye area black, forms a U-band. Eye diameter (mm): PME = 0.40, PLE = 0.33, AME = 0.13, ALE = 0.10. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.05, ALE–PME = 0.30, PME–PME = 0.28, PME–PLE = 0.38, PLE–PLE = 0.95, ALE–PLE = 0.65. Eye row length (mm): AE = 0.66, PME = 1.00, PLE = 1.33. AE row straight to slightly procurved. MOQ 2.63 times wider behind than in front (0.38 mm), length 1.55 times longer than anterior width. Clypeus height 2.3 times AME diameter. Sternum grayish yellow with thin black margins and a small tubercle each opposite coxae II, longer (1.40 mm) than wide (1.20 mm), anteriorly concave, and pointed posteriorly between coxae IV. Labium wider than long, yellow except constricted reddish brown basal one third, anterior end slightly concave in the middle. Maxillae yellow, cylindrical distally, and obliquely cut retrolaterally in posterior about one half. Chelicerae strong, yellow-gray frontally with dark brown hairs. Promargin bears two teeth and retromargin with three. Legs yellow, long, and slender, with brown spines. Spination in femora I = II = 3-0-2-3, distal prolateral spines of femur I close to each other, III = 3-0-2-2, IV = 3-0-2-1; tibiae I = 2 bristles-6(2-2-2)-2-2 and IV = 2-6(2-2-2)-2-2, middle pair with prolateroventral spine lower than its counterpart; metatarsi I = 0-7(2-2-3)-3-3 and IV = 0-8(1-1-1-1-1-3)-3-3. Femur II, tibia I, and metatarsus II subequal. Metatarsus I/tarsus I = 1.67. Tarsus three-clawed, each superior claw with five or six teeth. Leg formula 4123. Pedipalp black, except yellow patella and apex of cymbium, total length in between combined length of femur plus patella and tibia plus patella of leg I. Tibia with thick black hairs. Short median apophysis broadly sickle-shaped and flat in ventral view. Embolus strong, C-shaped, sharply pointed tip bears a small hook. Subtegulum small, almost as wide as long. Terminal apophysis distinct and moderately large. Cymbium without apical spine.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.70	1.30	2.60	2.75	1.65	11.00
2	2.60	1.20	2.40	2.60	1.50	10.30
3	2.40	1.10	2.30	2.65	1.45	9.90
4	3.40	1.30	3.15	4.30	2.00	14.15
Pedipalp	1.25	0.60	0.80	-	1.30	3.95

Abdomen yellowish brown with a dark brown ovate band in the anterior one half, anterior margin bears a dense row of black setae, rest of dorsum clothed with short and moderately long brown hairs. Posterodorsal one half with three or four transverse subrectangular whitish yellow bands and a concave yellow band in posterior of cardiac area. Venter yellow except for a gray to black band anterior to spinnerets and a rectangular band, with a pair of anterolateral sausage-shaped yellow spots dorsad of epigastric furrow. Posterior spinnerets longer than anterior pair, widely separated by as much as twice the diameter of the apical segment of anterior spinnerets.

Etymology: Named after Apolinario Mabini.

Natural history: The holotype male was collected from upland rice under coconut trees in July.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Cale Vill., holotype male, 5 July 1978, O. Serrano.

Distribution: Philippines.

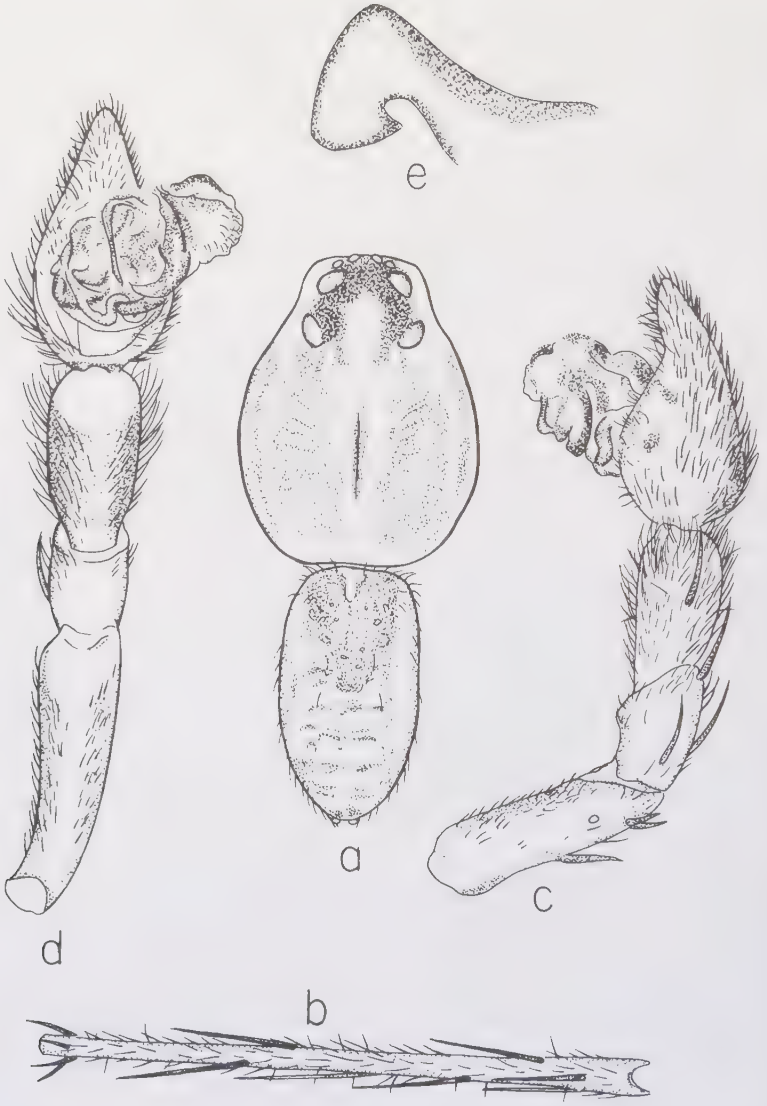


Fig. 242. Male *Pardosa mabinii* n. sp. (a); venter of metatarsus IV (b); retrolateral (c) and ventral (d) views of pedipalp; and median apophysis (e).

Pardosa pahalanga new species

(Fig. 243a–f)

Description:

Male: Total length 4.00 mm. Cephalothorax 2.10 mm long, 1.70 mm wide, 1.80 mm high. Abdomen 1.90 mm long, 1.40 mm wide, 1.20 mm high. Cephalothorax brown with a broad yellow median band radiating from fovea, eye area reddish brown to dark brown, eye margins black, and midclypeus, posterior to AE row, dark brown. Eye diameter (mm): PME = 0.26, PLE = 0.23, AME 0.11, ALE = 0.04. Eye separation (mm): AME–AME = 0.09, AME–ALE = 0.08, ALE–PME = 0.08, PME–PME = 0.23, PME–PLE = 0.28, PLE–PLE = 0.61, ALE–PLE = 0.51. Eye row length (mm): AE = 0.50, PME = 0.73, PLE = 0.98. MOQ 2.4 times wider behind than in front (0.30 mm); and anterior width distinctly shorter than length (0.45 mm). Clypeus height 1.64 times wider than one AME diameter. Sternum and maxillae yellow, both longer than wide. Labium yellow with dark brown posterolateral one third, about as long as wide. Chelicerae yellow with brown frontal hairs. Promargin bears two teeth and retromargin with three teeth. Legs yellow except light brownish bands in femora I–IV. Spination in femora I = 3-0-2-3 and IV = 3-0-2-1; tibiae I = IV = 2-6(2-2-2)-2-2, tibia I with dorsal bristles only; metatarsi I = 0-7(2-2-2-1)-3-3 and IV = 0-8(1-1-1-1-3)-3-3. Femur III, metatarsi I and II subequal in length. Metatarsus I/tarsus I = 1.33. Tarsus I with a pair of moderately long setae and venter with two longitudinal rows of 16–17 short spines each. Tarsi three-clawed, each superior claw of leg I with eight teeth and inferior claw has none. Leg formula 4123. Pedipalp slightly longer than femur IV, embolus transversely coiled posterior to terminal process, median apophysis hooked apically, cymbium bears a short distal part with a small and a long spine at apex.

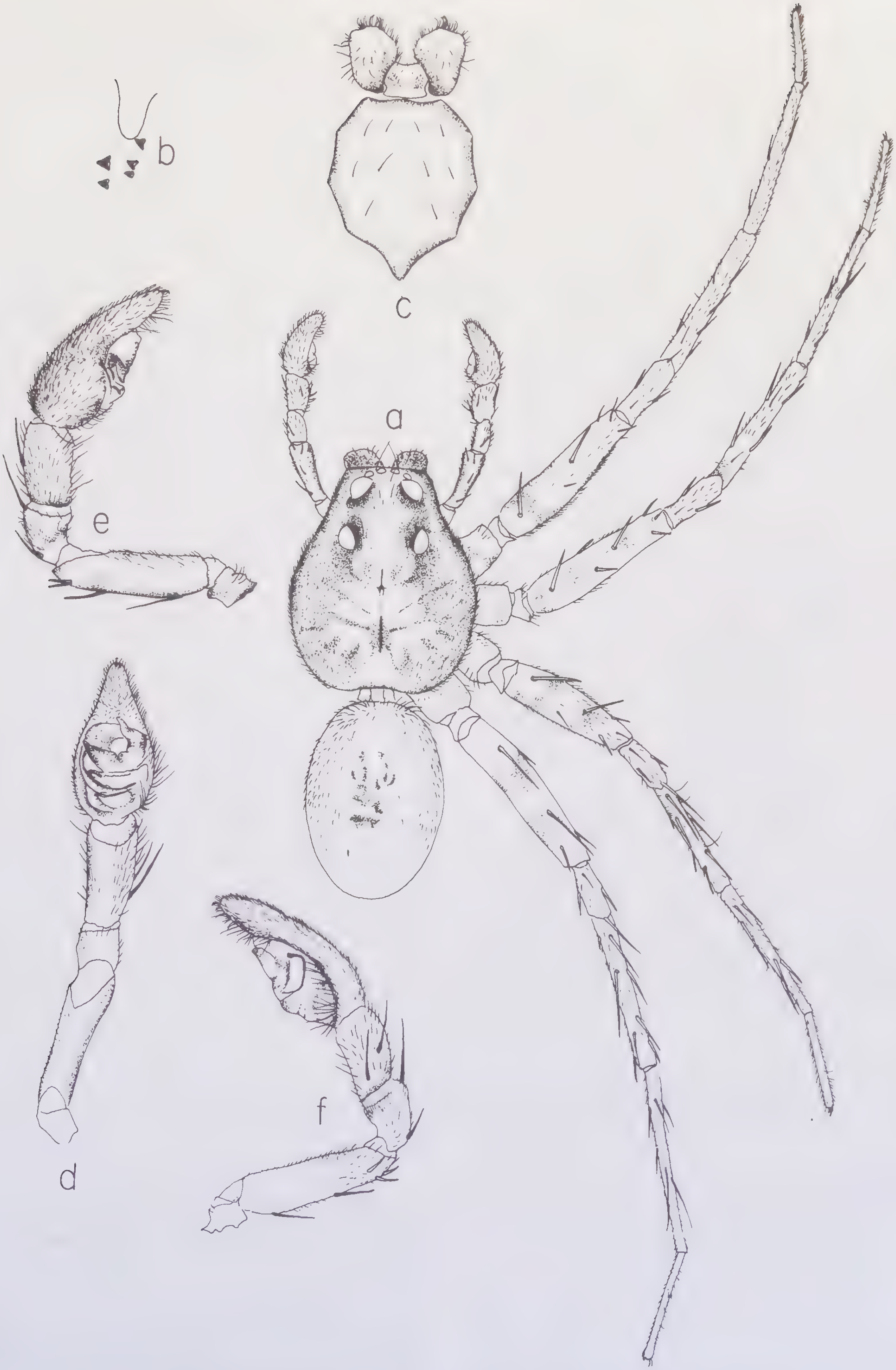


Fig. 243. Male *Pardosa pahalanga* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and ventral (d) and lateral (ef) views of pedipalp.

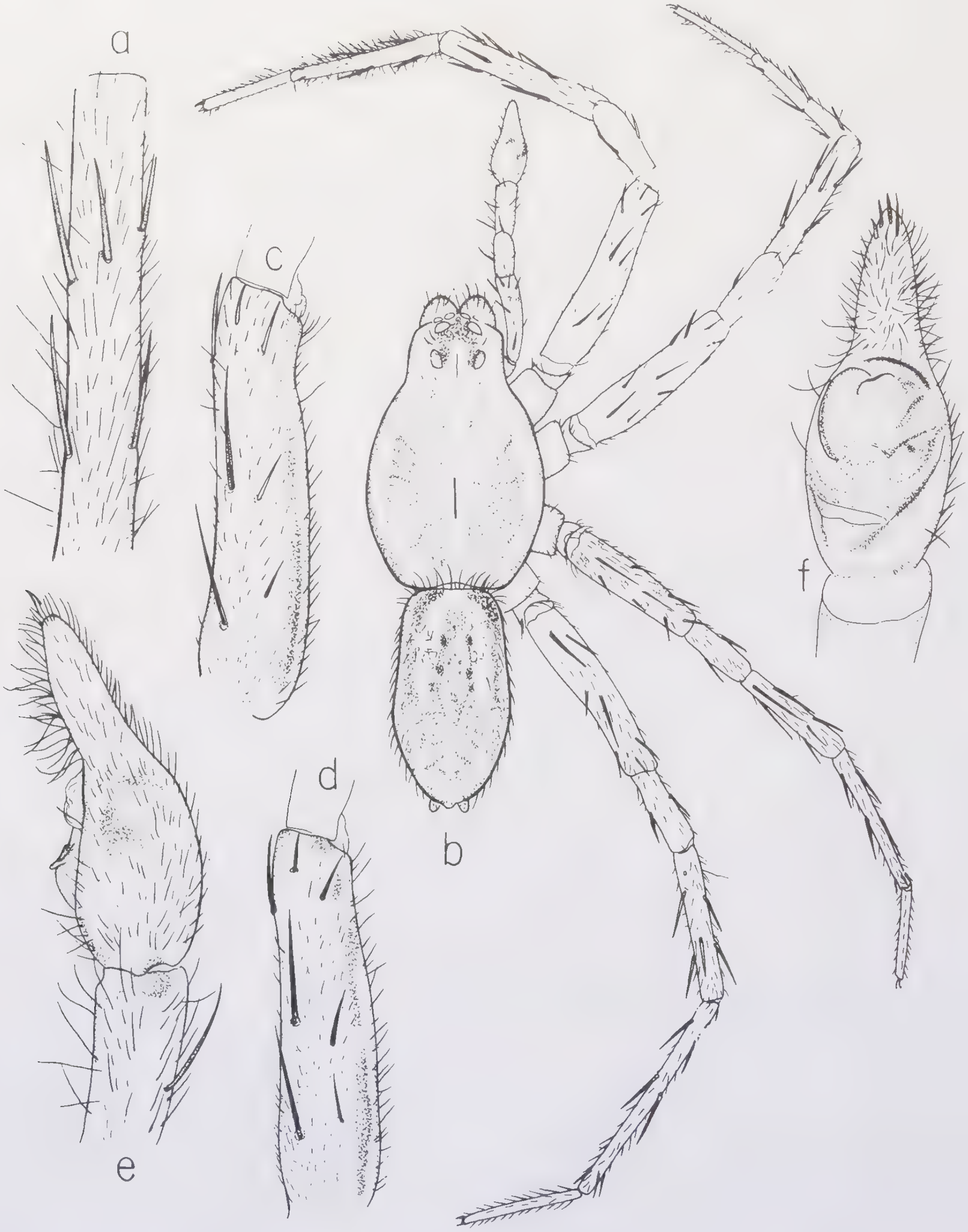


Fig. 244. Male *Hogna rizali* n. sp., dorsal view of tibia I (a); habitus (b); prolateral view of femora I (c) and II (d); and retrolateral (e) and ventral (f) views of pedipalp.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.70	0.75	1.75	1.60	1.20	7.00
2	1.65	0.70	1.65	1.60	1.15	6.75
3	1.60	0.60	1.45	1.70	0.95	6.30
4	2.20	0.75	2.05	2.80	1.40	9.20
Pedipalp	0.80	0.35	0.45	-	0.80	2.40

Abdomen yellowish brown except brown latero-anterior one half and irregular grayish brown patches in the middle. Venter uniformly yellow, including the spinnerets.

Etymology: Named after the transverse position of embolus, in Tagalog 'pahalang' + a.

Natural history: The single specimen was collected from pitfall trap in May set in a slash-and-burn upland ricefield with remaining *Cajanus cajan* L. in the borders.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 17 May 1985, M. Perez and B. Garcia.
Distribution: Philippines.

Genus *Hogna* Simon

Hogna Simon, 1885. Arachn. In: Explor. Sci. Tunis.: 9.

The genus *Hogna* consists of medium- to large-sized spiders (10–24 mm) distributed worldwide. They possess broad to slender low carapace, uniform in height between dorsal groove and middle eye row, pale median and submedian bands on dark background; AE row procurved, slightly shorter than or as long as PME row; AME equally spaced and longer than ALE; chelicerae robust, powerful and hirsute, promargin and retromargin with three teeth each; sternum usually orange to reddish brown; legs long and robust, reddish brown to orange, rarely with dark bands; scopulae well developed; spination in femur I = 3-0-2-3, tibia I = 0/1-6-0/2, metatarsus I = 0-7-0/3-0/3; abdomen ovate, dull yellowish brown or with contrasting pale and dark longitudinal bands; anterior end of abdomen with brush of erect curved setae; pedipalp of male with tibia longer than wide, broadest at tip; cymbium with two or more terminal spines; tegular apophysis sickle-shaped, often doubled reaching tip of tegular lobe; long embolus slender and tapered, arising in large arch and lying parallel to terminal apophysis on tegular lobe; median apophysis large, oblique, with stout spur near base; tegular lobe large, ear-like, functioning as conductor, epigynum bears shallow or deep atrium; median septum inverted T-shaped, copulatory opening at anterior margin of transverse piece of median septum; dark copulatory openings at anterior margin of transverse piece of median septum; dark copulatory tubesm short and thick; and spermathecae small, bulbous, sometimes with small nodules.

Although *Hogna* occurs worldwide, no species had been reported earlier in the Philippines.

Hogna rizali new species
(Fig. 244a–f)

Description:
Male: Total length 7.90 mm. Cephalothorax 4.60 mm long, 3.30 mm wide, 2.30 mm high. Abdomen 3.30 mm long, 2.00 mm wide, 1.80 mm high. Cephalothorax brown except yellow median longitudinal band with two pairs of brown spots anterior to long black fovea, whitish yellow submarginal band, and black eye margins. Eye diameter (mm): PME = 0.48, PLE = 0.34, AME = 0.21, ALE = 0.15. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.05, ALE–PME = 0.10, PME–PME = 0.25, PME–PLE = 0.35, PLE–PLE = 0.74, ALE–PLE = 0.79. Eye row length (mm): AE = 0.90; PME = 1.10, PLE = 1.34. MOQ 2.2 times wider behind than in front (0.50 mm), length 1.5 times longer than anterior width. Clypeus height 0.86 AME diameter. Sternum yellow with brown hairs, longer (2.00 mm) than wide (1.55 mm), with straight apical margin and tapered posteriorly between coxae IV. Labium wider than long, yellow except light brown laterobasal constriction. Maxillae yellow, apically broad, and narrow basally. Chelicerae robust, promargin with three teeth each. Left retromargin with three teeth, right retromargin with two teeth only. Legs yellow-brown, long and moderately robust, hairy, and bearing strong spines. Femora I–IV mottled with gray bands. Spination in femora I = 3-0-2-3, II = 3-0-3-3, III = 3-0-2-3, and IV = 3-0-2-2; tibiae I = II = 1-6(2-2-2)-2-2, distal prolateral spines in pair with II weaker than I, III = IV = 2-6-2-2, and midventroretrolateral spine in tibia IV distinctly higher than its counterpart; metatarsi I = 0-6(2-1-3)-1-2, III = 0-7(2-2-3)-3-3, and IV = 0-8(2-1-2-3)-3-3. Metatarsus and tarsus of leg I with yellowish brown scopulae. Metatarsus I/tarsus I = 1.53. Tarsi three-clawed, each superior claw of leg I with seven teeth. Leg formula 4123. Tegular lobe developed. Embolus emanates from prolaterodistal side of distal hematodocha and curls transversely adjacent to median apophysis. Median apophysis bears two tapered processes, forming a triangular plate on top view. Subtegulum moderately small, exposed part almost twice longer than broad. Cymbium bears five or six large spines apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.60	1.80	3.20	3.30	2.15	14.05
2	3.50	1.70	2.75	3.00	1.95	12.90
3	3.25	1.40	2.20	3.40	1.90	12.15
4	4.40	1.75	3.40	5.15	2.40	17.10
Pedipalp	1.65	0.75	1.00	–	1.00	4.40

Abdomen elongate, dark brown with an inverted white U-band anteriorly around cardiac area, uniformly clothed with brown hairs, and anterior margins bear a dense mat of dark brown setae. Venter yellow with a pair of intercepted longitudinal brown stripes in the middle, distal end, adjacent to the epigastric furrow, hairy. Ventrolateral sides of abdomen, close to the base of spinnerets, dark brown.
Etymology: Named after Dr Jose Rizal.
Natural history: The holotype male was collected from the inner wall of a Malaise trap set in the middle of an upland ricefield in October.
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Hinaplanan Vill., holotype male, 8 October 1985, A.T. Barrion.
Distribution: Philippines.

Hogna bonifacioi new species
(Fig. 245a–f)

Description:
Male: Total length 12.00 mm. Cephalothorax 5.80 mm long, 4.70 mm wide, 2.30 mm high. Abdomen 6.20 mm

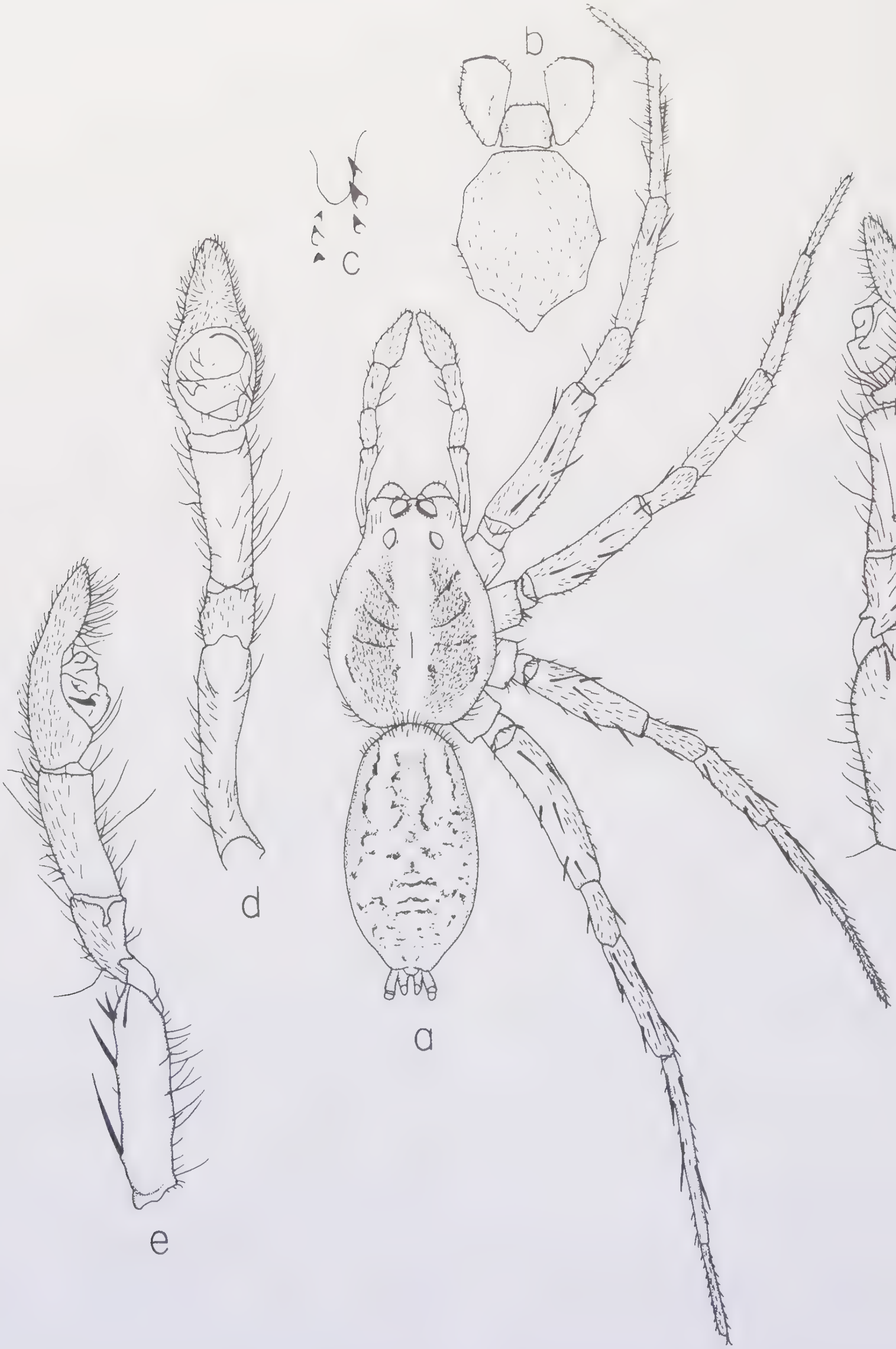


Fig. 245. Male *Hogna bonifacioi* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and ventral (d) and lateral (ef) views of pedipalp.

long, 2.50 mm wide, 3.00 mm high. Cephalothorax with a whitish yellow median band and white submarginal band, dark brown in between, and black ocular area with white hairs. Eye diameter (mm): PME = 0.55, PLE = 0.43, AME = 0.26, ALE = 0.20. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.08, ALE–PME = 0.10, PME–PME = 0.40, PME–PLE = 0.40, PLE–PLE = 0.98, ALE–PLE = 0.95. MOQ prominently wider behind than in front. Clypeus height approximately 0.7 AME diameter. Sternum longer than wide, clothed with fine white-yellow hairs. Labium and maxillae reddish brown. Labium slightly notched in the yellow anterior margin, wider than long. Chelicerae vertical, both fang grooves with three teeth. Legs brown with a yellow spot in posteroventer of coxae. Posterolaterals of trochanter with three notches, anteroventral notch deep in leg IV, semitruncate ventrolaterally. Spination in femora I = 3-0-2-3 and IV = 3-0-2-2; tibiae I = 1-6-1-2 (left) and 1-6-2-2 (right) and IV = 1-6-2-2; metatarsus I = 0-7-3-3. Metatarsus I as long as tibia I. Leg formula 4123. Pedipalp reddish brown, longer than all femora. Median apophysis flat and concave in ventral view, with diverging tapered apices, ratio of width (a) and length (b) = 0.625, embolus half-coiled anterior to tegulum. Terminal apophysis fine, needle-like at apex. Cymbium longer than wide and bears eight apical spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.30	2.35	4.40	4.40	2.70	19.15
2	4.70	2.25	3.80	4.00	2.40	17.15
3	4.50	1.95	3.60	4.50	2.40	16.95
4	5.50	2.20	4.80	6.50	3.25	22.25
Pedipalp	2.00	1.00	1.25	-	1.90	6.15

Abdomen brownish yellow with prominent U-shaped yellow band around cardiac area connected to the irregularly transverse median dorsal bands. Venter yellow-brown with an ovoid brown ventrolateral spot near the book lung areas. Posterior spinnerets dark gray, hooked in basal one half of posterior segment, with a longitudinal yellow stripe viewed laterally, entire length of two segments almost equal to the length of the basal segment of the anterior spinnerets.

Etymology: Named after Andres Bonifacio.

Natural history: All the specimens were collected by pitfall traps set in a soybean field planted after rice in March.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Koronadal, Barangay Uno Vill., holotype male with broken leg II, and paratype two males, 17 March 1983, A. Alviola and J. Siazon.

Distribution: Philippines.

FAMILY HERSILIIDAE THORELL

(The Hersiliids)

The spiders of the family Hersiliidae have remarkable appearance. They have as wide as long cephalothorax, with elevated cephalic region narrow and defined by a deep semicircular fovea; eight eyes in two strongly recurved rows, ALE placed high up midway between AME and PME; maxillae strongly converging; chelicerae weak with small to weak retromarginal teeth; legs three-clawed, very long and slender, particularly in males; abdomen short, semipentagonal; posterior spinnerets very long and cylindrical, longer than abdomen, apical segments very much elongated and attenuated, inner surfaces of posterior spinnerets thickly set, with long, fine, setiform spinning tubules; anterior spinnerets close together, between the posterior pair distinctly separated by a triangular colulus.

Hersiliids are extremely good hunters, living on tree trunks, old walls, stones, and spin a scanty web of irregular threads.

Genus *Hersilia* Audouin

Hersilia Audouin, 1826. In: Sav. Descr. Egypte Arachn.: 114.

Hersilia is a small genus comprising less than ten species, distributed in the African and Oriental regions. Members of the genus have flat and laterally angulate head; prominently high clypeus; tarsi of legs I, II, and III double-segmented; posterior spinnerets very long, much longer than abdomen; distinct colulus separates the anterior pair of spinnerets; and strongly recurved AE and PE rows.

Hersilia clathrata Thorell

(Fig. 246a–k)

Hersilia clathrata Thorell, 1895. Spiders of Burma: 56.

Redescription:

Female (Fig. 246a–h): Total length 12 mm. Cephalothorax 4.00 mm long, 3.65 mm wide, 2.55 mm high. Abdomen 8.00 mm long, 6.17 mm wide, 4.65 mm high subglobular. Cephalothorax brownish yellow, with white hairs along clypeus and intereye spaces, brown hairs along lateral margins, and black hairs in the deep and wide fovea, extended posteriorly. Cephalic area 0.25 times higher than the thoracic area. Lateral margins of fovea with four humps on each side. Eight eyes in three rows, eye margins black except in AME. AE and PE strongly recurved. PE (1.56 mm) longer than AE (1.43 mm). AME well in front of C-shaped PE and ALE. Eye diameter (mm): AME = PLE = 0.33, PME = 0.30, ALE = 0.10. Eye separation: AME–AME 0.70 of AME diameter, AME–ALE 1.30 times AME diameter, ALE–PLE 2.30 times ALE diameter, PLE–PME about one PLE diameter, PME–PME 0.83 of PME diameter. Median ocular quadrangle wider in the anterior than the posterior, its height as long as anterior length. Clypeus height twice AME diameter. Sternum yellow, like

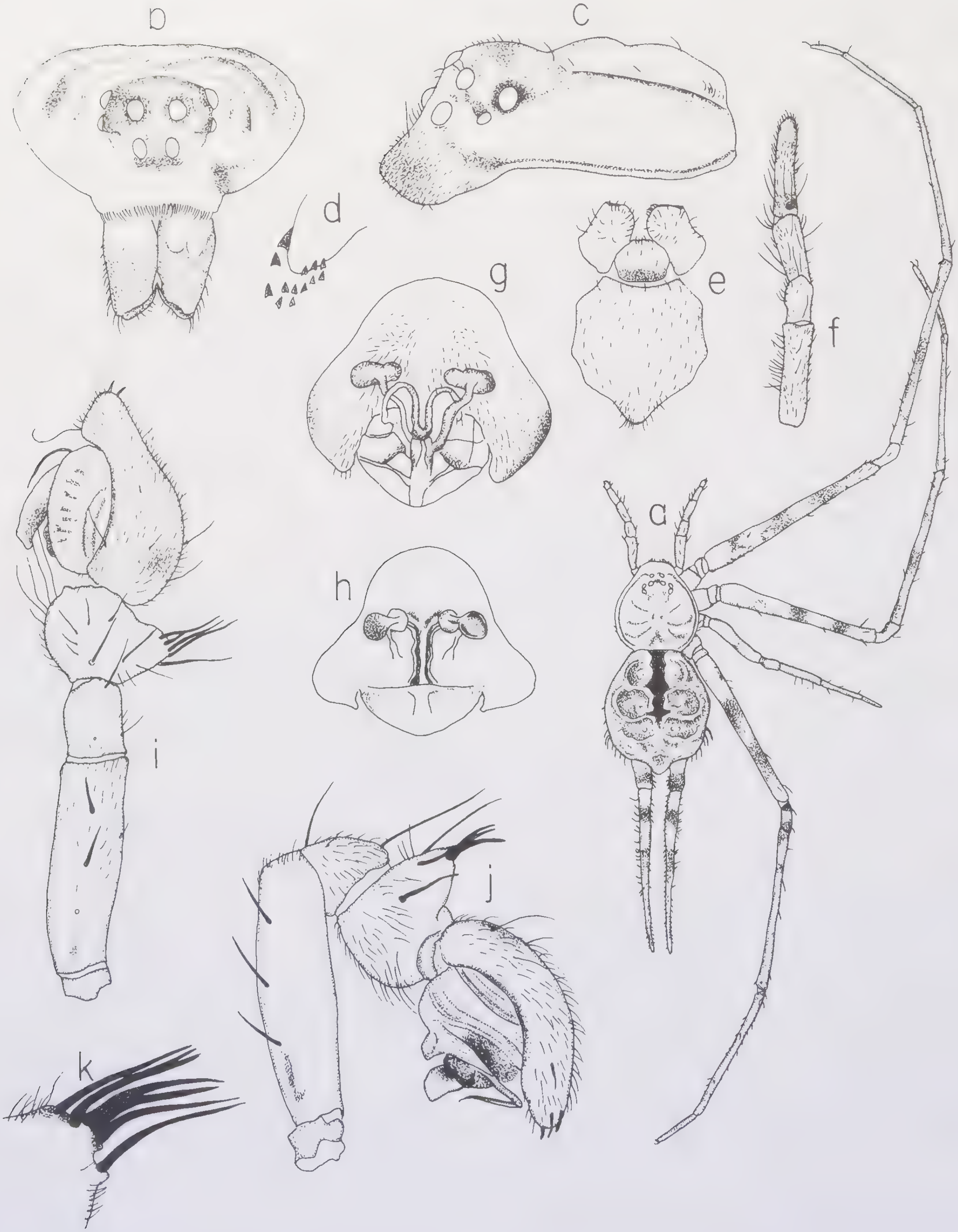


Fig. 246. Female *Hersilia clathrata* Thorell (a); frontal view of head (b); side view of cephalothorax (c); cheliceral teeth (d); sternum, labium, and maxillae (e); pedipalp (f); dorsal (g) and ventral (h) views of epigynum; and male, pedipalp in lateral view (ij); and tibial spines (k).

labium and maxillae, uniformly clothed with pale brown hairs, and subapically bearing four long black hairs in a transverse row. Chelicerae grayish brown, with three ovate yellow bands basally, promargin with three gray bands in the femora and tibiae I, II, and IV, two bands each in femora and tibiae of leg III, metatarsi and tarsi (including tarsal divisions) of all legs brownish with yellow band subbasally. Tarsi three-clawed, superior claws each with three to five strong teeth. Leg formula 2143. Pedipalps yellow except anterior and posterior ends of tarsi black, clawed with three or four strong teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus 1	Tarsus 2	Total
1	9.00	1.80	8.70	7.00	3.50	1.20	31.20
2	8.80	1.85	8.80	7.10	3.90	1.40	31.85
3	2.50	1.00	2.30	2.65	1.00		9.45
4	7.10	1.50	7.50	6.69	1.70	1.10	25.59
Pedipalp	1.80	0.75	1.20	–	1.50		5.25

Abdomen subglobular with four pairs of blackish brown spots inside ring-like bands in abdominal dorsum, bands separated by narrow transverse black to gray bands, and a broader longitudinal one. Venter of abdomen white with a V-shaped band running from epigynum to the spinnerets. Posterior spinnerets very long, two-segmented and 1.24 times longer than abdomen, basal segment stout and the apical segment ca. one fourth of the long segment, both segments with peg-like spines in the inner lateral part. Epigynum semicircular to bell-like, excavated posteriorly, the excavation with a pair of spermathecal lobes separated by a deep but narrow notch.

Male (Fig. 246i–k): Total length 8.85 mm. Cephalothorax 3.65 mm long, 3.55 mm wide, 2.80 mm high. Abdomen 5.20 mm long, 4.00 mm wide, 2.85 mm high. Cephalothorax as in the female, except for long hairs in the lateral margins. In general pattern very similar to the female. Eight eyes in three rows, margins black, AE < PE (28 : 30). Eye diameter (mm): AME = 0.35, PME = 0.30, PLE = 0.25, ALE = 0.10. AME–AME separation ca. one PLE diameter, AME–ALE less than one AME diameter. PME–PME separation one sixth less than one PME diameter. PME–PLE 1.12 times PLE diameter. Clypeus height 0.75 mm, ca. twice AME diameter. Chelicerae with or without yellow ovate marks basally, promargin with three teeth, retromargin with five small teeth. Sternum, maxillae, and palps similar to the female.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus 1	Tarsus 2	Total
1	10.90	1.90	10.80	9.50	4.00	1.30	38.40
2	10.40	1.80	11.25	9.80	4.20	1.40	38.85
3	2.80	0.90	2.30	2.90	1.10		10.00
4	8.00	1.35	8.30	5.20	3.00	0.90	26.75
Pedipalp	1.80	0.90	0.70	–	1.60		5.00

Leg formula 2134. Tibiae of male pedipalps with five or six stout hairs near apex, cymbium with five to eight spines apically, embolus half-coiled, tegular apophysis bean-shaped in ventral view and horseshoe-shaped in side view.

Abdomen as in the female but with more pronounced rings and longer brown spots. Posterior spinnerets about as long as abdomen.

Natural history: All the specimens were collected in July from the trunks of rubber tree, *Hevea* sp., grown adjacent to dryland ricefields. The body coloration is similar to the background color, probably to elude predators.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental, Claveria, Hinaplanan Vill., one male, one female, one penultimate male, and seven immatures, A.T. Barrion and E. Libetario.

Distribution: The Philippines (new record), Burma and Japan.

FAMILY THERIDIIDAE SUNDEVALL

(Comb-footed Spiders)

Theridiids are small-bodied and comb-footed spiders with globose abdomen and long thin legs. They have eight eyes (except *Comaroma* only six eyes) in two more or less parallel rows, the anterior median pair are dark and the rest are pale. The clypeus is relatively high. The legs are relatively long and curved, without spines on the tibiae and metatarsi. Large theridiids have a series of serrated bristles in tarsi IV, called tarsal comb. The comb may be reduced or absent in smaller species. The tarsal comb in leg IV is used to lengthen the throw of sticky silk threads over the prey. Trichobothria are arranged in two rows on each tibia. Each chelicera has no boss, but a weakly developed scopula may be present. Most theridiids build crisscross threads, tangled or irregular webs, and catch their prey in webs made of dense sheets and viscid strands. However, the genera *Dipoena* and *Euryopis*, which specialize on ants, do not build webs.

The theridiids are differentiated from the linyphiids by the presence of a tarsal comb in leg IV, absence of stridulating file on the outer surface of chelicera, but males and some females have stridulatory apparatus made up of a row of denticles on the abdomen opposing ridges on the posterior tip of carapace, and a labium that is not rebordered.

KEY TO THE GENERA AND SPECIES OF COMB-FOOTED SPIDERS

1 Abdomen marked with sclerotized brown spots on every base of a hair or seta and four spherical sigilla enclosed by four distinct nipple-like and spiked tubercles or humps (Fig. 247a); laterals each with two large brown spots (Fig. 247d); tegular apophysis triangular and pointed (Fig. 247e–g) with a hollow groove internally, median apophysis rather long, tooth-like, and entire radical complex T-shaped

retrolaterally. .... *Phoroncidia bukolana* n. sp. (Fig. 247a–g)

- Abdomen not sclerotized as above. 2

2 Colulus and paired setae absent. 3

- Colulus large to small, or reduced to a pair of setae only. 25

3 Abdomen longer than wide, high with distinct, long spines posterodorsally above spinnerets, sometimes subtriangular in lateral view. 4

- Abdomen without distinct long spines posterodorsally. 7

4 Abdomen moderately wide at midhalf and slightly tapered posteriorly. 5

- Abdomen widest at midhalf and strongly rounded posterodorsally. 6

5 Abdomen yellow, strongly tapered posteriorly (Fig. 248a) and usually subtriangular in lateral view, with or without a cavity subposterodorsally (Fig. 248cd); promargin with a bifurcated tooth (Fig. 248f); epigynum with a pair of widely separated black spots with converging arm in dorsal view (Fig. 248gh), anterior pair of spermathecae spherical (Fig. 248i); median apophysis of male basally stout and apically pointed, conductor flat distally and expanded laterally, forming two sharply pointed processes (Fig. 249b). .... *Chrysso argyrodiformis* (Yaginuma) (Figs 248a–i, 249ab)

- Abdomen elongate, slightly tapered posterodorsally, with six spines and seven transverse black bands in anterior one half (Fig. 250a); promargin bears a simple tooth (Fig. 250b); epigynum with double C-shaped orifices facing each other dorsally (Fig. 250d), and subglobular anterior spermathecae in oblique position, diverging anteriorly and converging posteriorly (Fig. 250e). .... *Chrysso anei* n. sp. (Fig. 250a–e)

6 Median longitudinal band of carapace broad posteriorly, abdomen distinctly wider than long (Fig. 251a); epigynum double sickle-shaped, fused in the middle and inverted scoop-like anteriorly (Fig. 251e), and bears a long duct (Fig. 251f). .... *Chrysso tiboli* n. sp. (Fig. 251a–f)

- Median longitudinal reddish brown band broad with slight constriction in groove area, abdomen longer than wide with a large chalk-white dorsomedian band and red band around it (Fig. 252a); epigynum simple with procurved plate, pouch on both ends (Fig. 252d), spermathecal tubes opposite each other, half-coiling atrium, spermathecae dorsad of duct and atrium (Fig. 252e). .... *Chrysso isumbo* n. sp. (Fig. 252a–e)

7 Clypeus projected forward in females; males with constriction in the middle and with sclerotized ring around abdomen encircling pedicel and covering epigastric region. 8

- Female clypeus and male abdomen not as above. 15

8 Female *Coleosoma*. 9

- Male *Coleosoma*. 12

9 Abdomen globular with four pairs of spherical black spots arranged in two longitudinal rows (Fig. 253a); epigynum with an anchor-like mark in dorsal view (Fig. 253cd) and nipple-like in lateral view, with a black band adjacent to it (Fig. 253e). .. *Coleosoma octomaculatum* (Boesenberg and Strand) (Fig. 253a–e)

- Abdomen oblongate and pointed posteriorly. ... 10

10 Carapace dark reddish brown; abdomen light brown to black with pale yellow band posterolaterally, tapers to a bluntly rounded posterior end and towards spinnerets viewed laterally (Fig. 254a); epigynum with a Y-shaped median slit bordered laterally by a distinct longitudinal black band and a short transverse black band anteriorly (Fig. 254b). .... *Coleosoma blandum* Cambridge (Fig. 254ab)

- Carapace grayish yellow to brown; abdomen black with a yellow transverse band or yellow with a chalk-white median longitudinal band; epigynum with a transverse concave mark. 11

11 Abdomen black with a transverse yellow submedian dorsal band (Fig. 256a); all eyes with uniform diameter; clypeus height 2.6 times AME diameter; metatarsus I/tarsus I = 2.67; pedipalp shorter than femur II; epigynum with a thin and moderately wide scape-like process in the posterior epigynal margin, median area resembles a circular plate with a longitudinal median slit, bifurcate on both ends, and anterior part with a broad concave mark (Fig. 256c), entire epigynum lying on a broad membranous Y-shaped process (Fig. 256d). .... *Coleosoma caliothripsum* n. sp. (Fig. 256a–e)

- Abdomen yellow with a chalk-white median longitudinal band and a black spot on each posterolateral edge (Fig. 257a); clypeus height three times AME diameter; metatarsus I/tarsus I = 2.50; pedipalp slightly longer than femur II; epigynum with a cup-shaped median plate and a circular orifice anterior to plate (Fig. 257c). .... *Coleosoma pseudoblandum* n. sp. (Fig. 257a–e)

12 Abdomen prominently elongated. 13

- Abdomen more or less globose posterior to the narrow anterior area, if elongated femur with peg-like teeth. 14

13 Ratio of abdominal length to width (AbL : AbW) = 2.17; abdominal dorsum gray to yellowish brown with pale yellow lateral, posterior hump uniformly gray without black spot (Fig. 255a); pedipalp's tibia

prominently constricted subbasally, embolar base broad and subtruncate with an elongate apically rounded structure beside it, terminal apophysis with two apical processes (Fig. 255bc). .... *Coleosoma blandum* Cambridge (Fig. 255a–d)

– AbL : AbW = 2.60; abdomen whitish yellow with three pairs of elongate black spots and a pair of long longitudinal bands, apicolaterally extended obliquely laterally (Fig. 258ab); tibia of pedipalp not markedly constricted subbasally (Fig. 258f); embolar base ovoid; terminal apophysis apically lanceolate with oblong pores (Fig. 258hl); tegular apophysis with two subapical teeth (Fig. 258k). .... *Coleosoma saispotum* n. sp. (Fig. 258a–l)

14 Femur without peg-like teeth; abdomen button- or knob-like, black to gray-brown with a narrow yellow to orange-brown anterior (Fig. 259a), and a brown-yellow spot midlaterally (Fig. 259b); clypeus height five times AME diameter; apophysis anterior of embolar base with a curved pointed tip (Fig. 259d); base of globose cymbium extended to apical two thirds of tibia (Fig. 259ef). .... *Coleosoma pabilogum* n. sp. (Fig. 259a–f)

– Femora I and II and tibia I with peg-like teeth (Fig. 260a); black abdomen twice longer than wide with two transverse white bands in anterior one half (Fig. 260b); clypeus height 2.5 times AME diameter; median apophysis apically blunt in ventral view (Fig. 260j) and deeply grooved in retrolateral view (Fig. 260k); base of elongate cymbium not extended to anterior of tibia (Fig. 260f–h). .... *Coleosoma matinikum* n. sp. (Fig. 260a–k)

15 AME diameter greater than PME; PE row usually straight to slightly recurved. 16

– AME diameter equal to or smaller than PME; PE row commonly straight and LE contiguous. 18

16 AE row slightly procurved in frontal view; MOQ forms a square; abdomen higher than wide, bears a white hollow Y-band and three black spots dorsally (Fig. 261a); promargin with a tooth (Fig. 261b); epigynum with a circular orifice (Fig. 261ef) and arm of globose pair of spermathecae reaches anterior of circular orifice (Fig. 261g). .... *Achaearanea brookesiana* n. sp. (Fig. 261a–g)

– AE row strongly recurved; MOQ wider in front than behind. 17

17 Adbomen subglobose, uniformly black except a pair of ovoid to subtriangular white spots posterodorsally (Fig. 262a); carapace with black submedian longitudinal stripes and four foot-like prints posterior to thorax (Fig. 262b); PME diameter as long as ALE; clypeus normal, height 1.2 times AME; promargin with three teeth (Fig. 262c); Tm I = 0.32; leg formula 1423. .... *Achaearyopa pnaca* n. gen. and sp. (Fig. 262a–i)

– Abdomen elongate with a distinct folium and carapace bears a broad dark gray arrow-like band with seven striae (Fig. 263a); PME diameter longer than ALE; clypeus height twice AME diameter and with two ovoid tranverse bands; promargin with a bifurcate tooth (Fig. 263c); Tm I = 0.38; leg formula 1243. .. *Landoppo misamisoriensis* n. gen. and sp. (Fig. 263a–h)

18 Body length more than 4 mm. 19

– Body length 2.01 mm or less. 20

19 Body length 8.30 mm; abdomen ovoid with a broad black anterior band (Fig. 264a); sternum black in posterior one half; promargin with three teeth (Fig. 264b); clypeus height 2.4 times AME diameter; Tm I = 0.34; metatarsus I/tarsus I = 4.00; tibia I l/d = 6.79. .... *Theridion bitakum* n. sp. (Fig. 264a–f)

– Body length 4.40 mm; globose abdomen gray-brown with a white longitudinal band (Fig. 265a); sternum yellowish brown; promargin with two simple teeth, basal one bifurcate (Fig. 265d); clypeus height four times AME diameter; Tm I = 0.66; metatarsus I/tarsus I = 2.69; tibia I l/d = 7.33. .... *Theridion necijaensis* n. sp. (Fig. 265a–g)

20 Sternum slightly wider than long with grayish spots laterally; abdomen yellow with a pair of small anterior and a pair of large posterior spots (Fig. 267a); clypeus height 2.6 AME diameter; promargin with a bifurcate tooth; tibia l/d = 4.69; metatarsus I/tarsus I = 2. ... *Theridion kambalum* n. sp. (Fig. 266ab)

– Sternum as long as or longer than wide. 21

21 Abdominal dorsum with two rows of longitudinal medially interrupted or zigzag bands. 22

– Abdominal dorsum with three or four pairs of black spots in two longitudinal rows. 23

22 Abdominal dorsum with zigzag longitudinal bands in two rows (Fig. 267a) laterally with an oblique dark band forming a pale yellowish white V-pattern (Fig. 267b); clypeus height twice AME diameter; metatarsus I/tarsus I = 1.06; tibia l/d = 9.09. .... *Theridion ischagosum* n. sp. (Fig. 267a–f)

– Longitudinal band in abdominal dorsum interrupted at midlength (Fig. 268a); clypeus height 2.5 times AME diameter; metatarsus I/tarsus I = 1.73; tibia I l/d = 9.83. .... *Theridion antheae* n. sp. (Fig. 268a–d)

23 Abdominal eight spots large, anterior band pear-shaped (Fig. 269a) and extended lateromedially (Fig. 269b); uncleared epigynum with a widely transverse elongate orifice (Fig. 269d); spermathecae oblongate posteriorly, free of coiled ducts (Fig. 269). .... *Theridion otsospotum* n. sp. (Fig. 269a–f)

– Abdominal spots relatively small, anterior band elongate but not extended laterally. 24

24 Abdomen with eight spots dorsally, anterior pair of bands elongate and relatively narrow (Fig. 270a), laterals without spot (Fig. 270b); spermathecae parallel and close to each other (Fig. 270d–f); clypeus height slightly more than twice AME diameter; metatarsus I/tarsus I = 1.83; body length 2.01 mm. .... *Theridion punongpalayum* n. sp. (Fig. 270a–f)

– Abdomen with six to eight spots dorsally (Fig. 271a) and a black spot laterally (Fig. 271d); spermathecae diverging apically and relatively widely separated (Fig. 271fg); body length 1.24 mm. .... *Theridion lumabani* n. sp. (Fig. 271a–g)

25 Colulus indistinct, replaced by two small setae. 26

– Colulus large and highly visible. 29

26 AME diameter smaller than PME diameter. 27

– AME diameter larger than PME diameter. 28

27 Apical one half of abdomen yellow and grayish black in the posterior one half (Fig.272a), sternum black (Fig. 272c); chelicera with four promarginal and two retromarginal teeth (Fig. 272d); spermathecae spherical with a coiled duct leading to indentions in posterior epigynal margins (Fig. 272h); metatarsus I/tarsus I = 1.33. .... *Anelosimus salaensis* n. sp. (Fig. 272a–h)

– Abdomen black with yellow patches, posterior end with a large black spot (Fig. 273a); sternum yellowish brown; promargin bears three teeth; spermatheca with thick coils and epigynum with a longitudinal slit-like bar (Fig. 273ef). .... *Anelosimus nigrobaricus* n. sp. (Fig. 273a–f)

28 Carapace barrel-shaped, transversely concave groove with nine branches; abdomen bears five pairs of gray-brown spots in two longitudinal rows (Fig. 274a), anterodorsal one third with scutum; metatarsus I/tarsus I = 2.11; Tm I = 0.89. .... *Dipoena ruedai* n. sp. (Fig. 274a–j)

– Carapace without branch-like groove (Fig. 275a), broad basally (Fig. 275b); abdomen without anterodorsal scutum; metatarsus I/tarsus = 1.31; Tm I = 0.66. *Dipoena tuldokguhitanea* n. sp. (Fig. 275a–g)

29 Lateral eyes separated by a distance equal to or greater than diameter of one eye; abdomen black with a broad red longitudinal band dorsally (Fig. 276a), venter with a red 'hourglass' band (chalk-white when preserved long) (Fig. 276d); spermathecal arms each with three or four coils (Fig. 276f). .... *Latrodectus mactans* (Fabricius) (Fig. 276a–f)

– Lateral eyes much closer to each other or contiguous. 30

30 Carapace bears a deep and transverse groove in the thoracic area; abdomen extended above and posterior to spinnerets, placing spinnerets almost midway between pedicel and distal end of abdomen. 31

– Carapace without transverse groove in thoracic area. 32

31 Abdomen long, slender, tapering, and prolonged behind spinnerets (Fig. 277a); cephalothorax with a long snout and elevated in thoracic area, not cleft between clypeus and AME area in lateral view (Fig. 277b); leg segments with bands, tibia of male's pedipalp longer than cymbium. .... *Argyrodes saganus* (Doenitz and Strand) (Fig. 277a–e)

– Abdomen short and mound-like, silvery except black median longitudinal and ventrolateral band (Figs 278a, 279a); male carapace cleft in lateral view between clypeus and AME (Fig. 278b); tibia of male's pedipalp slightly over one third of cymbium (Fig. 278de); epigynum of female with a median tongue-like scape near epigastric furrow (Fig. 279c). .... *Argyrodes bonadea* (Karsch) (Figs 278a–e, 279a–c)

32 Median ocular quadrangle (MOQ) square; fovea moderately deep and transverse; abdomen black with four sigilla (Fig. 280a); femora roughened by peg-like teeth (Fig. 280d). .... *Steatoda ngipina* n. sp. (Fig. 280a–f)

– Median ocular quadrangle not a square; femora I–IV without peg-like teeth. 33

33 Eye diameter subequal; abdominal dorsum with five pairs of pale transverse bands. 34

– Eye diameter not subequal; abdominal dorsum not as above. 35

34 PE row slight recurved; cephalothorax yellow with gray lateral margins and long fovea (Fig. 281a); posterior end of sternum truncate (Fig. 281b); apex of cymbium cleft, one process curved and sharply pointed apically (Fig. 281cd). .... *Enoplognatha philippinensis* n. sp. (Fig. 281a–d)

– PE row straight; cephalothorax brownish yellow with short brown fovea and black lateral margins (Fig. 282a); posterior end of sternum rounded (Fig. 282b); apex of cymbium cleft with a slightly curved and shortly pointed prolateral tip (Fig. 282de). .... *Enoplognatha kalaykayina* n. sp. (Fig. 282a–e)

35 Dorsum of abdomen bears 15 or more spots. ... 36

– Dorsum of abdomen not as above. 37

36 Abdominal dorsum with 19 black spots arranged in 3-4-4-2-2-2-2 pattern from anterior to posterior, and legs with bands (Fig. 283a); chelicerae moderately slender, diverging apically and separated basally (Fig. 283b); sternum with a black median spot and a longitudinal band (Fig. 283c). .... *Enoplognatha tuybaana* n. sp. (Fig. 283a–g)

– Abdominal dorsum with 15 black spots arranged in 3-3-3-2-2-2 pattern, and legs without bands (Fig. 284a); chelicerae moderately short and robust, fused basally (Fig. 284b); sternum uniformly yellow (Fig.

284c). .... *Enoplognatha yelpantrapensis* n. sp. (Fig. 284a–i)

37 Abdomen blackish brown, globular, and hirsute (Fig. 285a); Tm I = 0.16; metatarsus I/tarsus I = 2.86; chelicera with two bifurcate promarginal and one simple retromarginal teeth (Fig. 285b). .... *Enoplognatha cariasoi* n. sp. (Fig. 285a–g)

– Abdomen different from above. 38

38 Abdomen longer than wide, ovate, black with a yellow median and lateral longitudinal bands (or yellow with two broad black longitudinal bands) (Fig. 286a); epigynum M-shaped dorsally (Fig. 286e). ... *Enoplognatha malapahabanda* n. sp. (Fig. 286a–h)

– Abdomen ovoid with a dorsal hump or wider than long. 39

39 Abdomen longer than wide, bears a median band and dorsomedian tubercle (Fig. 287ab); Tm I = 0.40; metatarsus I/tarsus I = 1.61. .... *Enoplognatha pulatuberculata* n. sp. (Fig. 287a–d)

– Abdomen wider than long, median part with spots. 40

40 All eyes subequal; anterior margin of abdomen rather truncated, middorsum with globular spots (Fig. 288a); Tm I = 0.86; metatarsus I/tarsus I = 2.18; chelicera with two teeth, basal one bifurcate (Fig. 288b). .... *Enoplognatha maysanga* n. sp. (Fig. 288a–d)

– AME > ALE = PME = PLE; anterior margin of abdomen notched, median part with a gray longitudinal band (Fig. 289a); Tm I = 1.00; metatarsus I/tarsus I = 2.05; chelicera with a moderately large tooth. .... *Enoplognatha apaya* n. sp. (Fig. 289a–c)

Genus *Phoroncidia* Westwood

Phoroncidia Westwood, 1835. Zool. Journ. 5: 453.

Phoroncidia Westwood is a small genus of comb-footed spiders comprising only about 32 species. It is distributed widely in the Oriental, Palaearctic, Ethiopian, and Neotropical regions of the world. Members of the genus are small theridiids less than 2 mm long; cephalic region distinctly narrower than the thoracic region, eye region projected above clypeus anteriorly; legs short, leg IV longer or shorter than I; abdomen sclerotized, with various shapes and humps; spinnerets enclosed in a sclerotized ring; pedipalp of male bears a paracymbial hook on or near the edge of the cymbium; female epigynum bears a pair of globular spermathecae, small median orifice usually distinct.

Phoroncidia is a new genus record for the Philippines.

Phoroncidia bukolana new species
(Fig. 247a–g)

Description:
Male: Total length 1.84 mm. Cephalothorax 0.76 mm long, 1.76 mm wide, 0.54 mm high. Abdomen 1.08 mm long, 1.00 mm wide, 1.06 mm high. Cephalothorax yellow with a broad longitudinal gray band behind PME, ocular area brown with black eye margins. Cephalic area much narrower than the thorax, the latter widest along coxa III, with posterior end recurved. Eyes heterogeneous, eight in two recurved rows, AE row and PLE row with pearly luster and PME whitish, AE row more strongly recurved than PE row, PE row lightly recurved and longer (0.42 mm) than AE row (0.40 mm). Eye diameters (mm) in decreasing order: AME = 0.10, ALE = PME = PLE = 0.08. AME and PLE subequal ca. one PME diameter. AME–ALE separation 0.33 AME diameter. Median ocular quadrangle wider in front (0.28 mm) than behind (0.24 mm). Clypeus height 1.8 times AME diameter. Sternum yellow with sclerotized yellowish brown margins, hairy, hairs arranged in three U-shaped rows, truncated, and distal end lightly procurved medially at base of brownish labium. Maxillae with serrula in the distal end, inner margins with scopulae projected toward each other. Chelicerae rather feeble, basally apart but fused at the inner apex of the basal one third promargin with a tooth. Legs yellow with brownish tinge at the distal ends of segments, tibiae I–IV with one dorsal spine each, ratio of length (l) and diameter (d) of tibia I = l/d = 8.75, position of first dorsal spine in tibia I = 0.34 of length, length of first dorsal spine/diameter = 1.5, length of femur I/cephalothorax length = 1.32, total length of leg I/cephalothorax length = 4.17, metatarsus (Tm) I = 0.32, tarsi three-clawed, each with two to five and one teeth in the superior and inferior claws, respectively. Leg formula 1243. Pedipalp's tibia with four or five long hairs retrolaterally. Tegular apophyses triangular and pointed, with a hollow groove internally. Median apophysis rather long, tooth-like, entire radical complex T-shaped retrolaterally.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.00	0.25	0.70	0.74	0.48	3.17
2	0.92	0.26	0.62	0.63	0.48	2.91
3	0.69	0.22	0.46	0.45	0.37	2.19
4	0.85	0.27	0.53	0.55	0.43	2.63

Abdomen globular to ovate, with sclerotized brown spots at bases of every short hair, four spherical sigilla enclosed in the four prominent dorsal nipple-like tubercles or humps, entire hump spiked and black apically, with grayish black patches in between, except the basal pair, posterior end with a pair of black spots, laterals with a clear yellow area above branchial operculum, bearing two rather large brown spots and a series of seven small ones around them, posterolateral with four diagonal small ovate spots, venter dark brown along

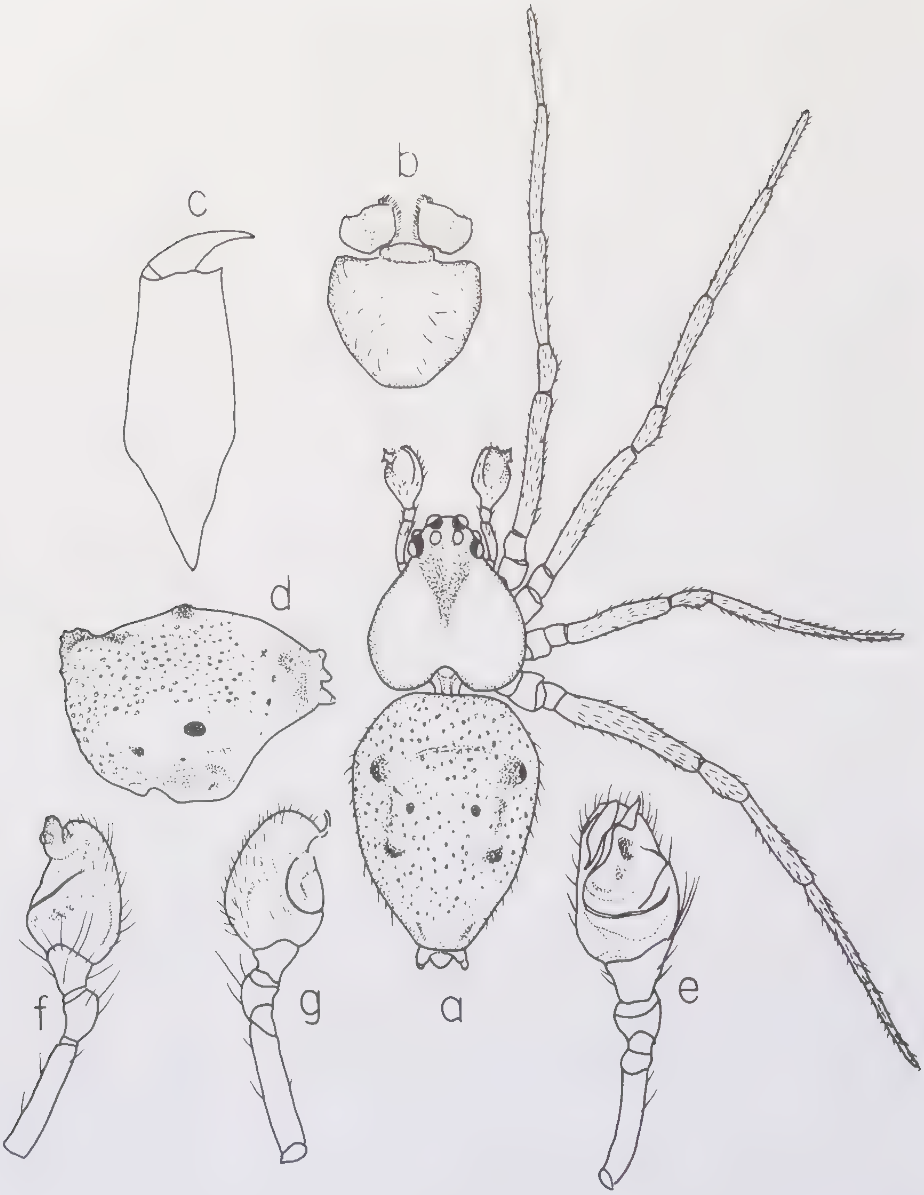


Fig. 247. Male *Phoroncidia bukolana* n. sp (a); sternum, labium, and maxillae (b); chelicera (c); side view of abdomen (d); and ventral (e) and lateral (fg) views of pedipalp.

branchial operculum and with nine small globular brown spots arranged in three transverse rows below it. Spinnerets in a yellow ring, anterior pair two or three times more robust than the posterior pair, the latter separated by a distance five times that of the anterior.
Etymology: The name was derived from the Tagalog word 'bukolan' (+ a), which means with many humps.
Natural history: A rare species collected during the dry season (May) from a kerosene light trap pan set in slash-and-burn dryland rice adjacent to a secondary dipterocarp forest.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 30 May 1984, A.T. Barrion.
Distribution: Philippines.

Genus *Chrysso* O. Pickard-Cambridge

Chrysso O. Pickard-Cambridge, 1882. Proc. Zool. Soc. London: 429.

Chrysso O. Pickard-Cambridge consists of small to medium-sized (1–5 mm long) comb-footed spiders. Members of the genus are distinguished from other allied genera by the following characters: longer than wide cephalothorax; AE row slightly procurved, PE row straight or slightly procurved or recurved; AME separated from each other by one AME diameter or more, and set closer to ALE than to each other; PME moderately closer to each other than to laterals. Eyes subequal in size or AME slightly larger or smaller than the rest; clypeus height and shape of carapace variable; cheliceral length almost as long as clypeus height, anterior margin of chelicerae armed with two large teeth; sternum truncate between posterior coxae; leg I the longest; all patellae with a retrolateral tubercle; tarsus IV bears a tarsal comb; abdomen longer than width and height, extended beyond spinnerets, laterals with furrows or stripes and dorsolateral spines, often subtriangular in lateral view; female epigynum a sclerotized plate with no distinct orifice, sacs present ventrally, and connecting ducts do not match length of male embolus; male pedipalp bears a distinct radix, embolus base curved, as in *Achacaranea*, and its length supported by radix and its tip by both radix and conductor; hematodocha connected to the bulb in the proximal part of alveolus.

Chrysso comprises 23 species, distributed in the Palearctic, Australian, Nearctic and Neotropical regions. The genus is reported for the first time in the Philippines and the Oriental region.

Chrysso argyrodiformis (Yaginuma)
(Figs 248a–i, 249ab)

Ariamnes argyrodiformis Yaginuma, 1952. Arachn. News. 1: 13–16.
Topo a. Yaginuma, 1960. Spiders of Jap. 1: 33.
Chrysso a. Yaginuma, 1965. Acta Arachn. Tokyo 19: 28–36.

Redescription:
Female: (Fig. 248a–i): Total length 3.39 mm. Carapace 1.07 mm long, 0.87 mm wide, 0.68 mm high. Abdomen 2.32 mm long, 1.20 mm wide, 2.00 mm high. Cephalothorax rather ovate, yellow with black eye surrounds and light brown, thin V-shaped longitudinal fovea, cephalic area short and narrow, thoracic area widest between coxa II and III. Eight eyes in two rows, strongly recurved AE shorter than the straight PE (0.38 : 0.41 mm). Eye diameter (mm): PME = PLE = 0.08, AME = 0.06, ALE = 0.05. AME separation 1.5 times eye diameter. AME–ALE separation two thirds AME diameter. PME and PLE–PME separation subequal, as long as one AME diameter. Median ocular quadrangle wider in front than behind. Sternum yellow, longer than wide, lateral margins slightly indented, distal end straight, posterior tapers to a rounded end. Labium contiguous to the sternum, yellow with a brown, rounded to slightly triangular apical margin. Maxilla concolorous with the sternum, twice longer than broad, ocular laterodistal side sigmoid-shaped, terminating in a brown serrula, rather narrowed towards tip. Inner lateral side with yellow scopula, thick in the apical one third, and sparse below. Chelicera vertical, yellow with light brown fang, and promargin with bifurcated tooth. Yellow legs long and slender with or without gray bands and bearing a few dark brown spines, tibiae have only two dorsal spines in legs I II, and IV and one in leg III, tarsus three-clawed with five to seven teeth in the superior claws. Leg formula 1423. Palp yellow and approximately one seventh of leg IV, single-clawed with seven teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.96	0.48	2.48	3.12	0.84	9.88
2	1.84	0.40	1.40	1.76	0.64	6.04
3	1.40	0.32	0.72	1.04	0.48	3.96
4	2.48	0.48	1.52	2.12	0.64	7.24
Pedipalp	0.34	0.16	0.20	–	0.33	1.03

Abdomen yellow with chalk-white marks, rather oblong, pointed to a tubercle posteriorly, with four black and medially broad setae, laterally triangular, with distinct posterodorsal hump and ventrally projected spinnerets, indented before and after hump, anterior portion overhangs the cephalothorax. Epigynum simple, hat-like, with extended flaps and a pair of black bolt knots, spermatheca globular with converging arms.
Variation: The total length ranged from 2.4 to 3.39, the smaller species had a triangular abdomen with six black and medially stout setae in the posterodorsal tubercle.
Male (Fig. 249ab): Total length 2.40 mm. Cephalothorax 1.10 mm long, 0.85 mm wide, 0.75 mm high. Abdomen 1.30 mm long, 1.00 mm wide, 1.15 mm high. Cephalothorax yellow with a moderately deep fovea, a long brown seta midway between fovea and PE rows 1 and 3, forming a triangle anterior to fovea, and black eye margins. Eight eyes in two recurved rows, with AE shorter than PE row. Eye diameter (mm): AME = 0.10, ALE = PME = PLE = 0.08. Eye separation (mm): AME–AME = 0.12, AME–ALE = 0.04, PME–PME = 0.05, PME–PLE = 0.07. LE contiguous. MOQ wider in front than behind. Clypeus height wide, 1.3 times AME diameter. Sternum, labium, and maxillae as in female. Chelicerae yellow, vertical, and moderately slender. Legs long and slender, yellow with black patches or small bands on apices of tibiae and metatarsi, bases of tibiae, and subapicoventral parts of femora. Patella with a strong apicodorsal spine and tibia with one middorsal and one apicodorsal spines. Leg formula 1423. Pedipalp barely one half of femur IV, bulb nearly ovoid, with a basally stout and apically pointed median apophysis, conductor flat distally and expanded laterad, forming two sharply pointed processes.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.90	0.95	3.55	4.40	1.05	13.85
2	2.20	0.40	1.75	2.10	0.70	7.15
3	1.60	0.30	1.00	1.25	0.55	4.70
4	2.40	0.35	1.65	2.20	0.65	7.25
Pedipalp	0.40	0.13	0.20	–	0.46	1.19

Abdomen yellow or with a black band along cardiac margins, a pair of black spots medially, and a moderately broad black band in posterodorsal one half, constricted twice laterally. Dorsal surface more hirsute than rest of subdominal areas and with scattered white spots.

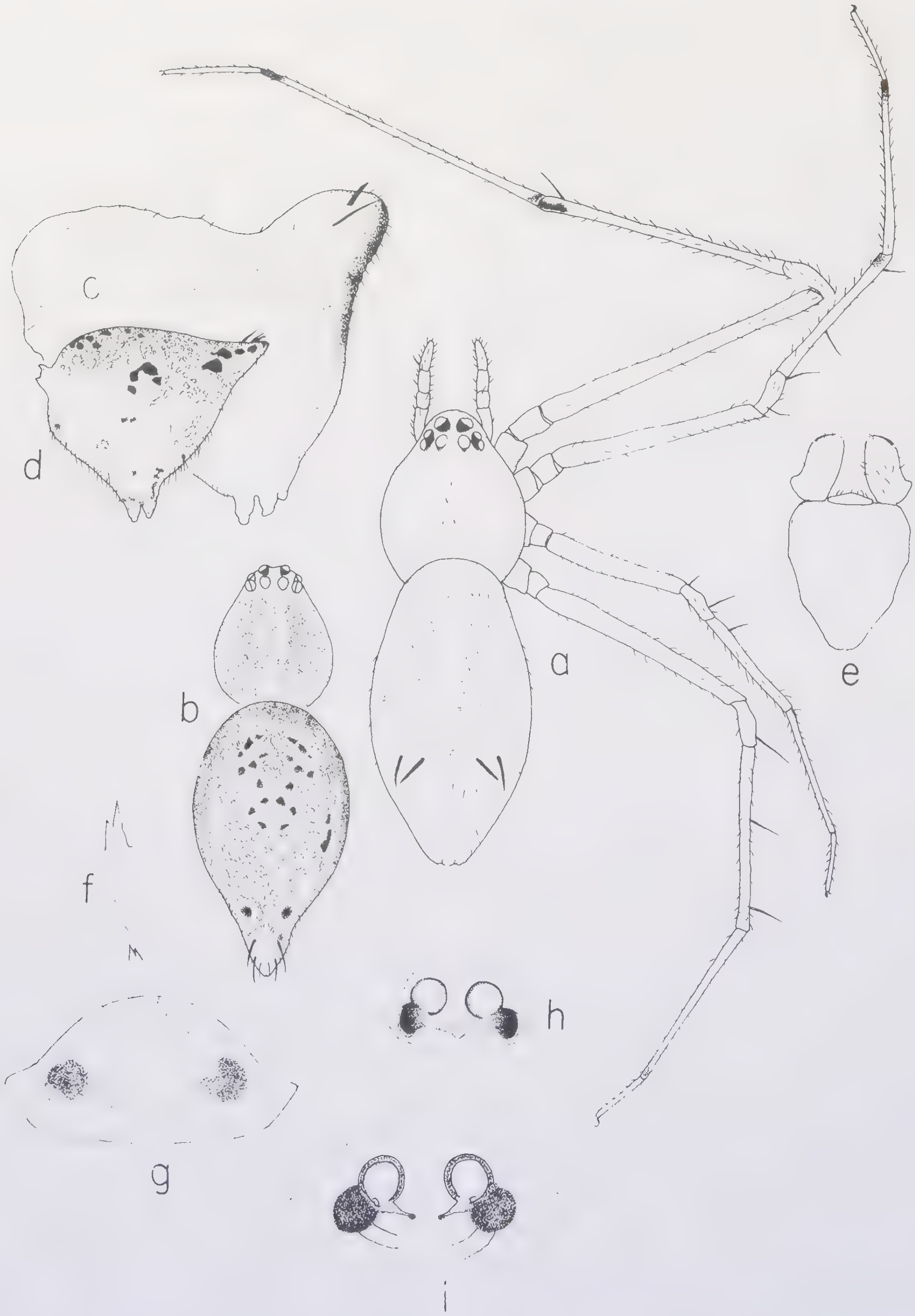


Fig. 248. Female *Chrysso argyrodiformis* (Yaginuma) without abdominal spots (a); with a pair of posterodorsal black spots (b); lateral view of two forms (cd); sternum, labium, and maxillae (e); cheliceral teeth (f); and dorsal (gh) and ventral (i) views of epigynum.

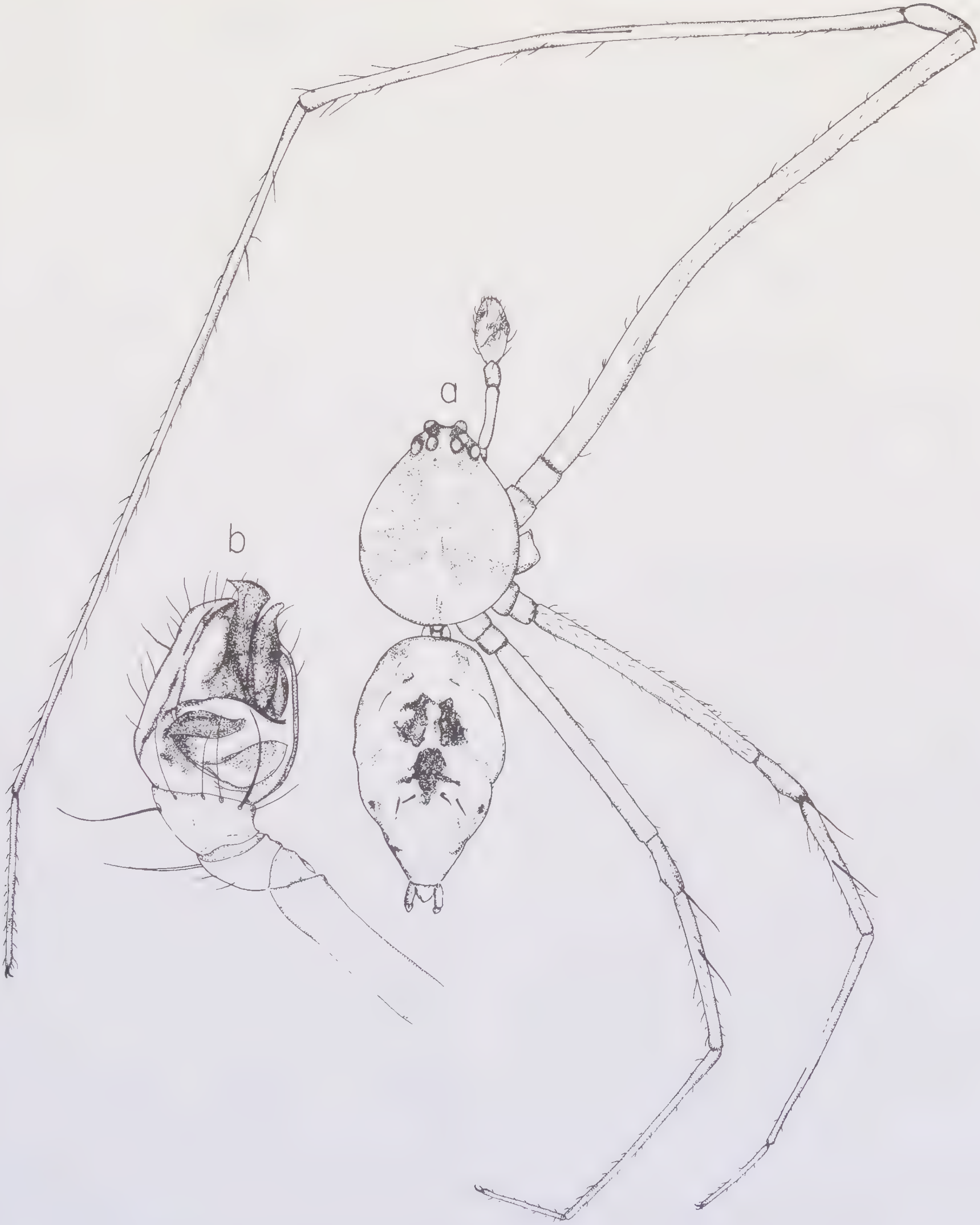


Fig. 249. Male *Chrysso argyrodiformis* (Yaginuma) (a); and ventral view of pedipalp (b).

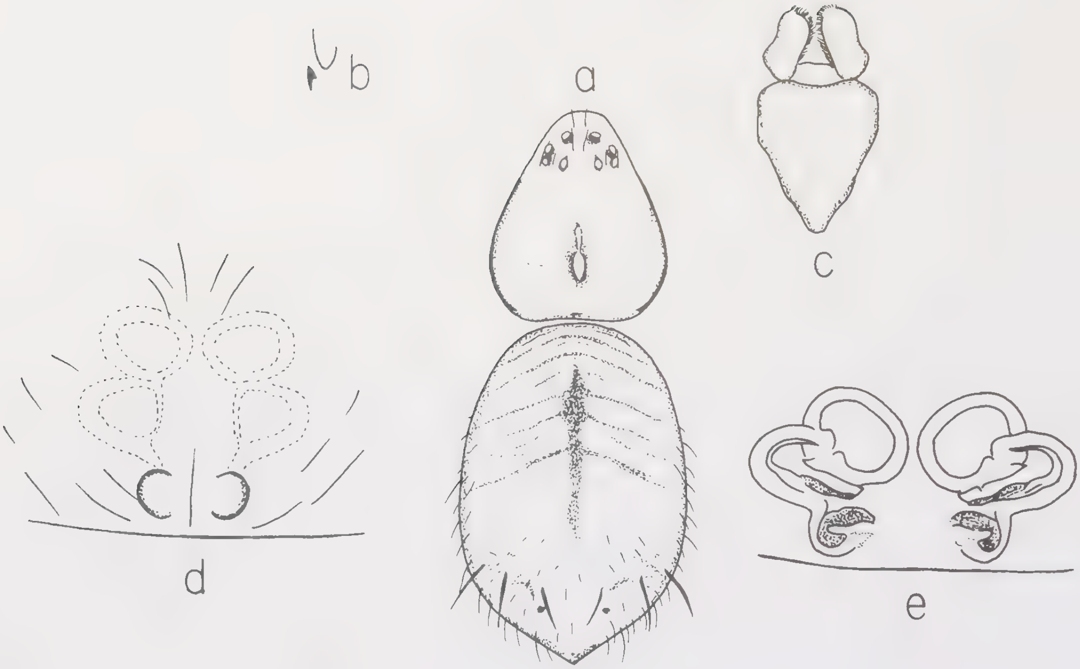


Fig. 250. Female *Chrysso anei* n. sp. (a); cheliceral teeth on promargin (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Posterior end prominently wider than anterior end in lateral view.

Natural history: *C. argyrodiformis* was collected underneath the leaves of 1–2-month old corn along with females of *Coleosoma blandum* in April. This spider fed on nymphs of maize orange leafhopper *Cicadulina bipunctata* (Melichar) and tetranychid mites. Two males were collected from KLT in slash-and-burn upland rice in December and from corn leaves in November.

Material examined: PHILIPPINES: *Luzon Is*: Laguna Prov., Los Baños, IRRI Farm, two females, 20 April 1980, A.T. Barrion; Quezon Prov., Real, Llavac Vill., two males, 28 December 1984, R. Apostol, Batangas Prov., Tanauan, Cale Vill., one male, 16 November 1979, R. Apostol.

Distribution: Japan and the Philippines (new record).

Chrysso anei new species
(Fig. 250a–e)

Description:

Female: Total length 2.50 mm. Cephalothorax 0.90 mm long, 0.78 mm wide, 0.60 mm high. Abdomen 1.60 mm long, 1.20 mm wide, 1.70 mm high. Cephalothorax yellow except for the black, clypeal margin, short transverse band just below AME, carapace lateral lining extended from above coxae I–IV, and blackish brown median band along the partially deep thoracic groove, cephalic area narrower than thorax, the latter widest between coxae II and III, median posterior end with a black mark. Ocular area with a pair of long hairs in the median ocular quadrangle, one each between ME and LE and behind PLE. Eight eyes in two rows, AE row strongly recurved but shorter (0.36 mm) than the straight (0.40 mm) PE row. Eye diameter (mm) in decreasing order: AME = 0.08, ALE = PME = PLE = 0.06. AME–AME separation one AME diameter. AME–ALE separation one fourth of of AME and one third of ALE diameter. PME–PME separation a little more than one PME diameter. PME–PLE separation one PLE diameter. Median ocular quadrangle wide anteriorly (0.24 mm) and narrow posteriorly (0.19 mm). Clypeus relatively high, 1.8 times AME diameter. Sternum as in other *Chrysso*. Labium yellowish brown with a straight apical and slanted lateral margins. Maxillae yellowish brown, 3.4 times longer than wide. Chelicera with a simple promarginal tooth. Legs yellow with transverse gray-black patches in femora, and about one to three spots in patellae and tibiae, apices of tibiae II and IV reddish, matatarsi II and IV with a short median and a long distal gray band, two dorsal spines in tibiae II and IV and one in tibia III, patellae with two dorsal spines, tarsus II with a pale gray band at midhalf, leg formula (without I) 423. Pedipalps single-clawed with one long dorsal spine each in the patella and tibia.

Abdomen oblong, yellow, with eight bands – seven anterior transverse black bands and one reddish band dorsomedially – and six bamboo leaf-like setae posteriorly, posteromedian with a pair of leaf-like setae constricted marginally between median and subdorsal setae.

Posterior end and lateral sides with six and one black spots, respectively. Spinnerets as in other *Chrysso*. Epigynum a light yellow semisclerotized plate with hairs and a prominent pair of C-shaped black openings dorsally. Anterior spermathecae subglobalar in oblique position, anteriorly diverging and posteriorly converging.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	–	–	–	–	–	–
2	2.08	0.44	1.40	1.84	0.60	6.36
3	1.20	0.32	0.72	1.04	0.44	3.72
4	2.36	0.40	1.48	1.92	0.56	6.72
Pedipalp	0.70	0.24	0.34	–	0.64	1.92

Etymology: Derived after the type locality.
Natural history: The only specimen was collected in December from a water pan trap set along borders of dryland rice.
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Anei Vill., holotype female, 10 December 1985, E.M. Libetario.
Distribution: Philippines.

Chrysso tiboli new species

(Fig. 251a–f)

Description:
Female: Total length 3.82 mm. Cephalothorax 1.20 mm long, 1.10 mm wide, 0.86 mm high. Abdomen 2.62 mm long, 3.32 mm wide, 2.72 mm high. Cephalothorax yellow-brown except black lateral linings and reddish brown median band, the latter thin and bifurcated towards cephalic area and widening posteriorly. Fovea a deep transverse groove covered by the broad band. Ocular area with thin reddish brown eye rims, two long hairs each present in midmedian ocular quadrangle and behind PME, three posterad of PLE. Eyes eight in two rows, strongly recurved AE row shorter (0.44 mm) than the straight PE row (0.47 mm). Eye diameters (mm) in decreasing order: AME = 0.10, ALE = PME = 0.08, PLE = 0.07. AME–AME separation one AME diameter. AME–ALE separation one half ALE diameter. PME–PME separation one PME diameter. PME–PLE separation three fourths PME diameter. LE contiguous. Median ocular quadrangle wider in front (0.29 mm) than behind (0.24 mm). Clypeus height three times AME diameter. Sternum yellow longer (0.76 mm) than wide (0.70 mm), margins slightly elevated opposite coxae I–III, posterior end bluntly rounded and extended beyond coxa IV. Labium yellow and typical of Theridiidae. Maxillae yellow except brown serrula, twice longer than wide, lightly converging apically. Chelicera yellow, except yellowish brown distal end and base of fang, basal end acutely pointed, promargin with two teeth (outer one bifurcated) and retromargin with one. Legs long and slender, yellow with black spots in femora and tibiae, black bands in the apices of tibiae I and IV and mid and apices of metatarsi I, II, and IV, entire tarsus I and mid-half of tarsus II, patellae I to IV with two dorsal spines, all tibiae with two dorsal spines except tibia III with only one. Tm I = 0.41, tibia I l/d = 11.83, position of first and second dorsal spines in tibia I = 0.40 and 0.92, respectively, length of first dorsal spine/width in tibia I = 3.71. Metatarsus I/tarsus I = 4.18, total length of leg I/cephalothorax length = 9.43, length of femur I/cephalothorax length = 2.80. Tarsi three-clawed with five and one teeth in the superior and inferior claws, respectively, two auxilliary foot claws present. Leg formula 1423. Pedipalp almost as long as femur III, single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.36	0.68	2.72	3.68	0.88	11.32
2	2.08	0.58	1.48	2.04	0.68	6.86
3	1.40	0.46	0.84	1.30	0.56	4.56
4	2.96	0.60	1.76	2.56	0.72	8.60
Pedipalp	0.40	0.18	0.26	–	0.54	1.38

Abdomen globular to subglobular dorsally and triangular posterodorsally and laterally, pointed distally, broadening to a semitruncated end posteriorly, yellow except for the reddish cardiac area, eight orange-red (four on each side) laterally projected stripes and a long fork-shaped stripe directed posteriorly, all emanating from the median band, proximal one third with three transverse rows of bamboo leaf-like setae arranged in multiples of 2 (6,4,2). Spinnerets vertical and ventrad, anterior near each other basally and diverging apically. Posterior pair widely separated, closer to anterior pair than to each other. Colulus and paired setae absent. Epigynum with a double-sickle-shaped structure merging in the middle, scoop-like anterior end with the small on top, spermathecal openings prominently developed, its tube having several loops.
Etymology: Species name was derived from the tribe living in the area, known as the Tibolis.
Natural history: The only specimen was collected by D-Vac suction from dryland rice in July.
Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Lake Sebu (Tiboli Tribal Area), holotype female, 19 July 1985, A.T. Barrion.
Distribution: Philippines.

Chrysso isumbo new species

(Fig. 252a–e)

Description:
Female: Total length 3.55 mm. Cephalothorax 1.30 mm long, 0.88 mm wide, 0.85 mm high. Abdomen 2.25 mm long, 1.80 mm wide, 1.40 mm high. Cephalothorax yellow with a median longitudinal reddish brown band extended to the ocular area and clypeus, fovea a short

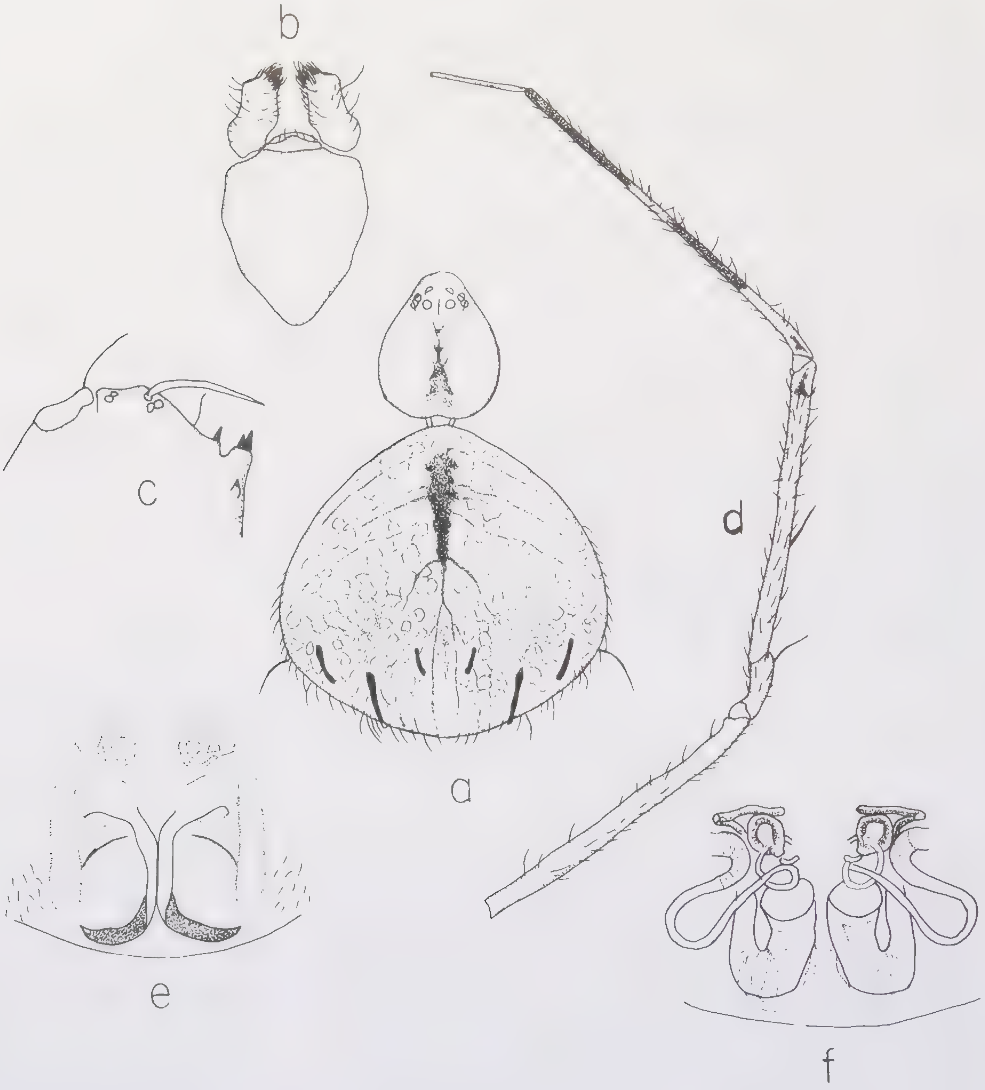


Fig. 251. Female *Chrysso tiboli* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); leg I (d); and dorsal (e) and ventral (f) views of epigynum.

deep cavity, eye rims reddish brown, PE with a long hair behind PLE and between PLE–PME, cephalic area narrower than thoracic area and elevated behind PME, thoracic area widest between coxae II and III. Eight eyes in two rows, strongly recurved AE row nearly as long as straight PE row (0.41 : 0.42 mm). Eye diameter (mm): AME = PME = 0.10, PLE = 0.09, ALE = 0.08. AME–AME separation one AME diameter. AME–ALE separation one fifth AME and one fourth ALE diameter. PME–PME separation four fifths PME diameter. PME–PLE two thirds PLE diameter. Median ocular quadrangle slightly wider in front (0.30 mm) than behind (0.28 mm). Clypeus height two AME diameters. Sternum yellow, heart-shaped with rounded extension between coxae IV. Labium yellow, wider, than long, and with a dorsoventrally flat distal end. Maxillae three times longer than wide, slightly converging apically. Chelicerae small, promargins with two teeth (outer bifurcated) and retromargins with one, fangs yellowish brown with 21 serrated-like teeth. Legs long and slender, yellow with few gray spots in femora, reddish bands on apices of tibiae and bases of metatarsi I, II, and IV, metatarsus I with gray band at midlength and distally, traces of gray bands visible in apices of metatarsi II and IV, tibia I l/d = 14.82, position of first and second dorsal spine in tibia I = 0.36 and 0.86, respectively, length of first dorsal spine of tibia I = 2.67 mm, total length of leg I/cephalothorax length = 7.97, length of femur I/cephalothorax length = 2.37. Leg formula 1423. Pedipalp single-clawed with five teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.08	0.56	2.52	3.28	0.92	10.36
2	2.00	0.48	1.40	1.92	0.64	6.44
3	1.28	0.40	0.76	1.10	0.48	4.02
4	2.44	0.56	1.52	2.20	0.60	7.32
Pedipalp	0.40	0.16	0.18	–	0.38	1.72

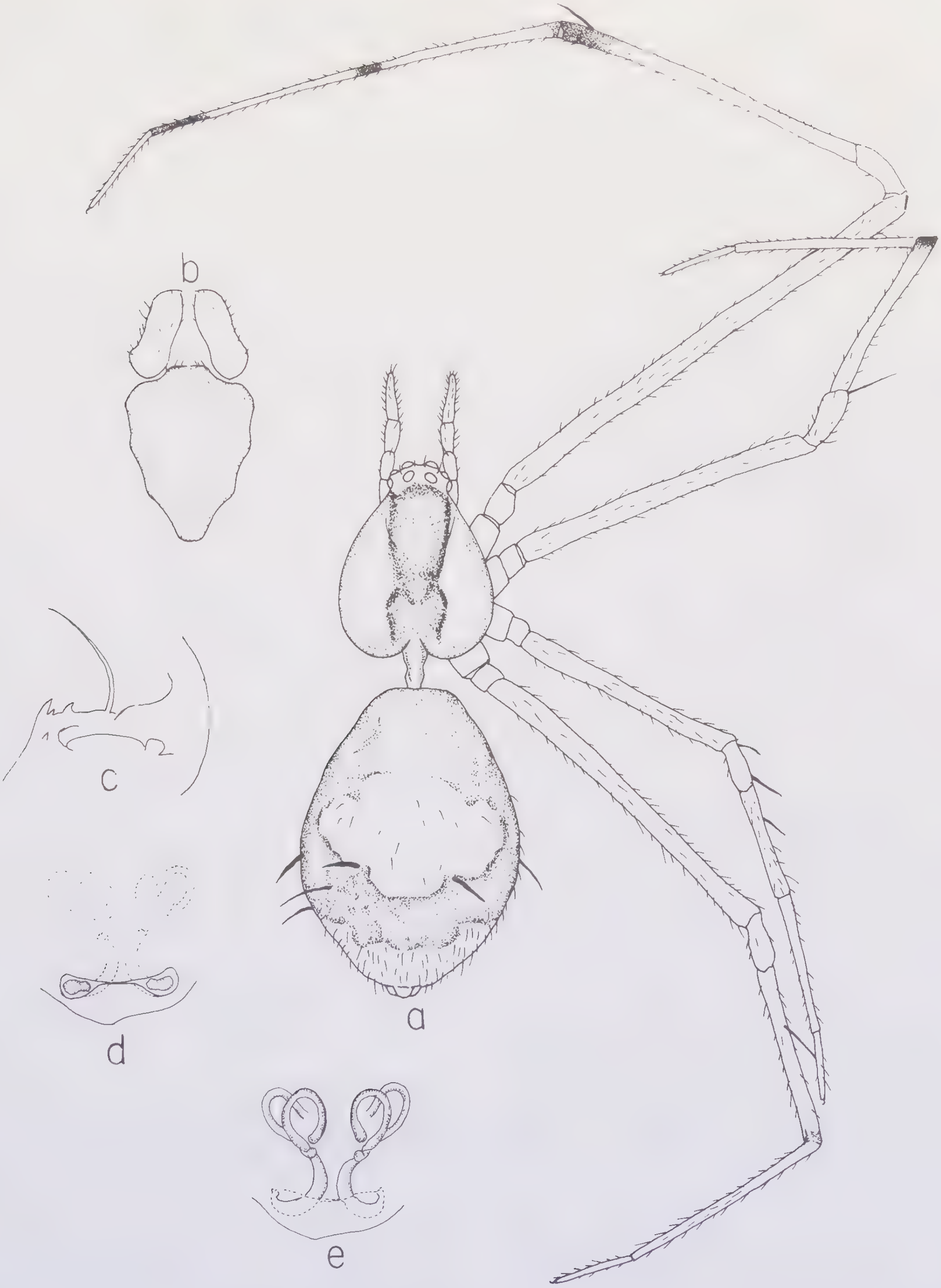


Fig. 252. Female *Chrysso isumbo* n. sp. (a); sternum and maxillae (b); cheliceral teeth (c); and dorsal (d) and ventral (e) views of epigynum.

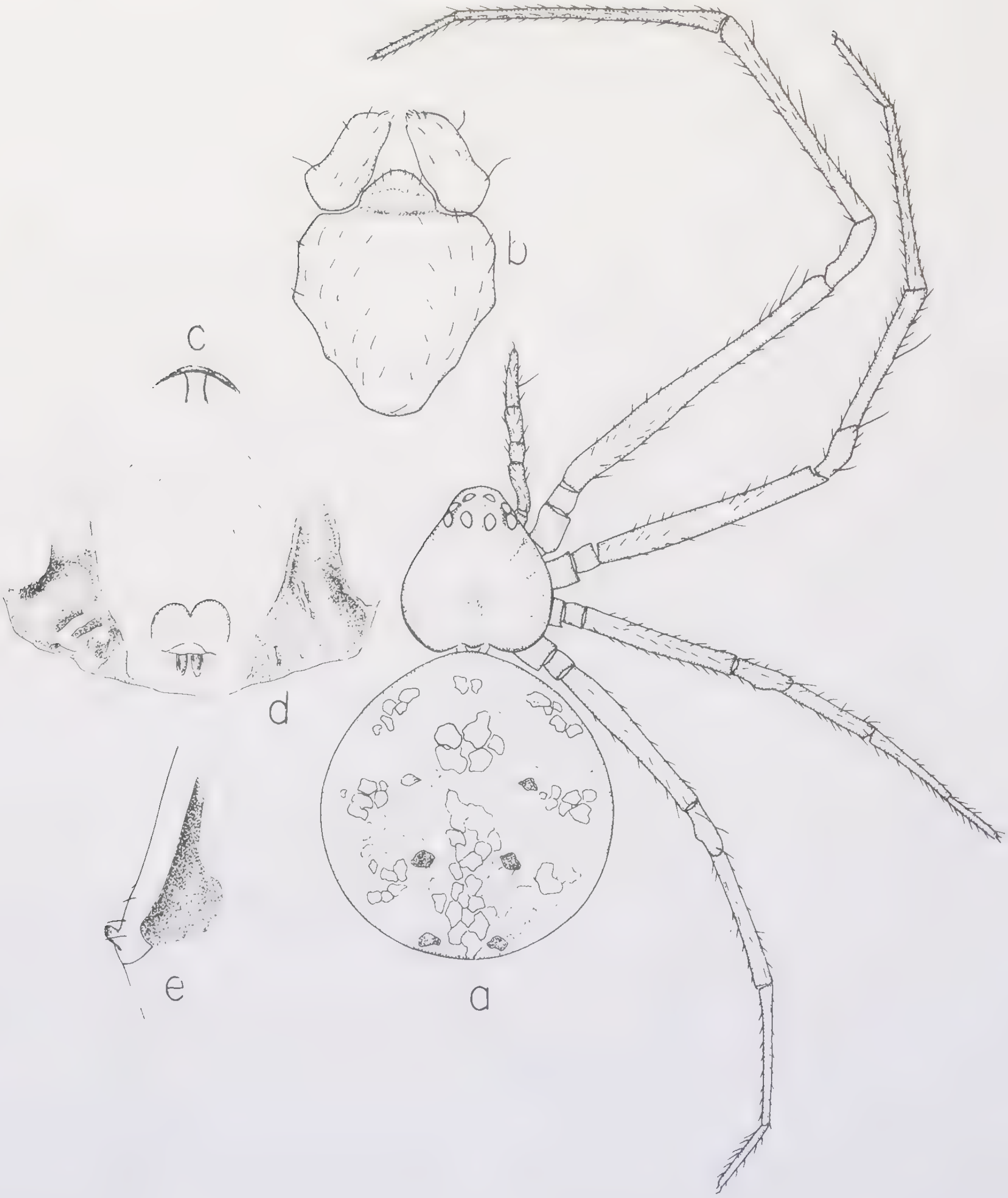


Fig. 253. Female *Coleosoma octomaculatum* (Boesenberg and Strand) (a); sternum, labium, and maxillae (b); and dorsal (cd) and lateral (e) views of epigynum.

Abdomen ovoid with a large chalk-white dorsomedian band and red marks around it, ten black spatulate-like setae arranged transversely in two rows (four and six) posterior to the broad white band, posterior end yellow with a pair of black spots, venter and spinnerets yellow. Anterior spinnerets diverging, though the minute terminal segments are projected toward each other. Epigynum a simple yellow procurved plate with a pouch on both ends, spermathecal tubes opposite each other, half-coiling the atrium, spermathecae dorsad of duct and atrium, spermathecal arm loop highly visible.

Etymology: Derived from the type locality.

Natural history: All specimens (one female and three immatures) were netted from the foliage of rainfed wetland rice under water stress in the early morning (0530 hours) in October.

Material examined: PHILIPPINES: *Palawan Is*: Pala-

wan Prov. Brookes Pt., Isumbo Vill., holotype female and three immatures, 2 October 1987, A.T. Barrion.
Distribution: Philippines.

Genus *Coleosoma* O. Pickard-Cambridge

Coleosoma O. Pickard-Cambridge, 1882. Proc. Zool. London: 426.

The spider genus *Coleosoma* consists of small comb-footed spiders, usually less than 3 mm long. They have very small eyes, PE row separated by one to two eye diameters; clypeus rounded and projected anteriorly; chelicerae bear zero or one tooth in the promargin; legs I and II longest in males and I and IV in females; tarsal comb present but hardly visible; abdomen always modified in males, usually constricted and with sclerotized ring or scutum, less modified in the females; colulus absent; male pedipalp bears a functional median apophysis, weakly sclerotized conductor, sclerotized radix, and thin thread-shaped embolus; epigynum of female poorly sclerotized without clear orifices.

The sclerotized ring around the anterior of abdomen, extended as a ventral shield, and a pair of lobes on the abdominal dorsum separate the males of *Coleosoma* from the theridiid *Chrysso* O. Pickard-Cambridge and *Theridion* Walckenaer.

Coleosoma is a small genus, comprising only seven species, distributed in the Palearctic, Nearctic and Neotropical regions. *C. blandum* Cambridge, however, has cosmopolitan distribution.

Coleosoma octomaculatum (Boesenberg and Strand)

(Fig. 253a–e)

Theridion octomaculatum Boesenberg and Strand, 1906. Abh. Senck. Natur. Ges. 30(1–2): 138.
Coleosoma octomaculatum (Boesenberg et Strand) Yaginuma, 1986. Spiders of Japan, new ed.: 48.

Redescription:
Female: Total length 2.68 mm. Cephalothorax 0.80 mm long, 0.73 mm wide, 0.60 mm high. Abdomen 1.88 mm long, 1.70 mm wide, 1.83 mm high. Cephalothorax yellow, with a broad black band in the foveal area extended to the posterior margin, and black eye margins. Foveal area moderately high and sloped to almost a 45° angle posteriorly. Eye diameter uniformly 0.05 mm. Eye separation: AME–AME = PME–PME = PME–PLE similarly as long as one AME diameter. AME–ALE 0.6 AME diameter. LE contiguous. Clypeus height large, 3.6 times AME diameter. Sternum yellow, moderately hirsute, as long as wide, posterior end bluntly rounded between coxae IV. Labium pale yellow brown and wider than long. Maxillae same color as labium, longer than wide, oblique and moderately converging. Chelicerae yellow, small but moderately robust basally, promargin with two teeth, apical tooth bifurcated. Leg yellow except black rings in the apices of femora and tibiae, tibia I d/l = 0.12 and bears two dorsal spines, metatarsus I/tarsus I = 2.88, Tm I = 0.49. Leg formula 1423. Pedipalp uniformly yellow, a little shorter than metatarsus II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.35	1.23	1.38	0.48	4.94
2	1.10	0.33	0.78	0.88	0.43	3.52
3	0.75	0.26	0.46	0.55	0.38	2.40
4	1.28	0.35	0.93	0.93	0.43	3.92
Pedipalp	0.30	0.13	0.15	–	0.24	0.82

Abdomen globular, yellow, with four pairs of dorsal spherical black spots arranged longitudinally in two rows. Spinnerets subequal in size, not visible dorsally. Epigynum with an anchor-like mark, lateral sides black.
Natural history: Collected from ricefield in April.
Material examined: CHINA: *Canton*, one female, 12 April 1980, V.A. Dyck.
Distribution: Japan, China, Taiwan and South Korea.

Coleosoma blandum Cambridge

(Figs 254ab, 255a–d)

Coleosoma blandum Cambridge, 1882. Proc. Zool. Soc. London: 247.

Redescription:
Female (Fig. 254ab): Total length 2.21 mm. Cephalothorax 0.71 mm long, 0.65 mm wide, 0.45 mm high. Abdomen 1.50 mm long, 0.80 mm wide, 1.00 mm high. Cephalothorax reddish to dark brown, ocular area slightly elevated, and eye margins black. Eight eyes in two rows, AE strongly recurved, PE straight. Eye diameter (mm): AME = PME = PLE = 0.04, ALE = 0.05. Eye separation: AME–AME = AME–ALE one fourth shorter than one AME diameter. PME–PME = PLE–PME as long as one AME diameter. Clypeus height large, 3.25 times AME diameter. Sternum gray-brown, longer than wide, posterior end rounded between coxae IV. Labium same color as sternum and maxillae, wider than long, distal end light yellow. Maxillae longer than wide, apices converging towards each other. Chelicerae yellow with some gray tinges, small, promargin with a single tooth. Legs yellow except apices of tibiae IV black, moderately slender, tibiae I with two strong dorsal spines. Leg formula 1423. Pedipalp blackish brown, about as long as tibia IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.15	0.30	0.88	0.88	0.38	3.59
2	0.80	0.25	0.55	0.50	0.35	2.45
3	0.63	0.23	0.35	0.48	0.30	1.99
4	1.00	0.25	0.78	0.70	0.36	3.09
Pedipalp	0.23	0.13	0.13	–	0.25	0.74

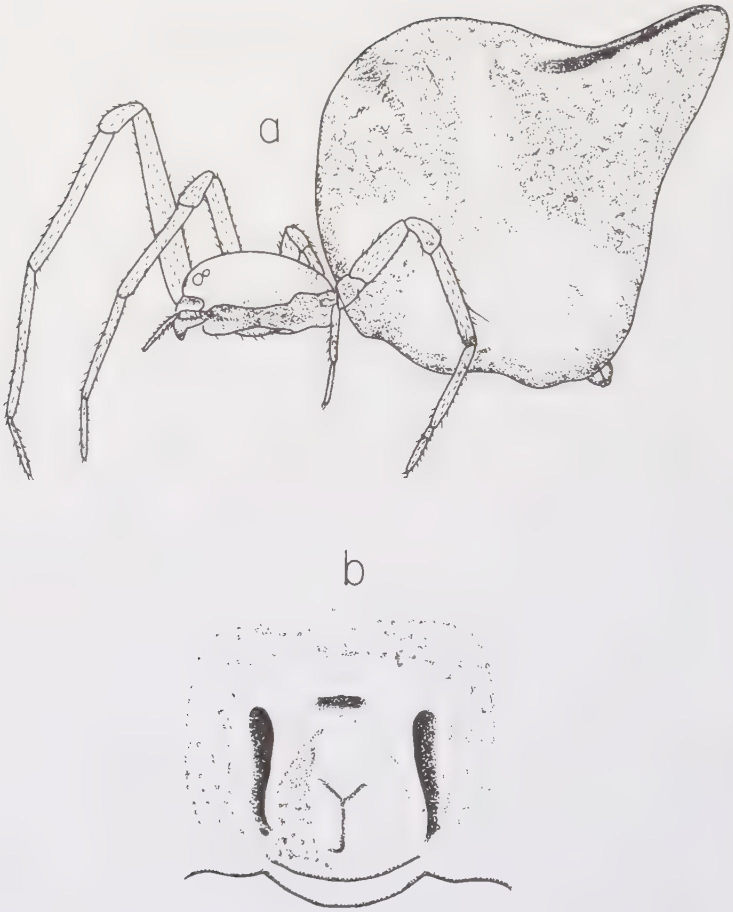


Fig. 254. Female *Coleosoma blandum* Cambridge (a); and dorsal view of epigynum (b).

Abdomen pointed posteriorly, gray brown dorsally but yellowish mediolaterally and brownish toward spinnerets and epigynum. Generally subtriangular in lateral view. Epigynum with a Y-shaped orifice surrounded by a gray-brown band, two longitudinal lateral black bands, and a short anterior one.

Male (Fig. 255a–d): Total length 2.40 mm. Cephalothorax 0.88 mm long, 0.64 mm wide, 0.44 mm high. Abdomen 1.48 mm long, 0.68 mm wide, 0.65 high. Cephalothorax, palp, legs, and scutum of abdomen reddish to gray or yellowish brown. Head elevated, median ocular quadrangle square. AE row recurved and PE row procurved, lateral eyes closer to each other than to the medians. Fovea indistinct area with three pairs of radial furows. Elongate abdomen gray except scutum, anteriorly marked by a V-shaped notch forming two rounded protuberances. Legs yellow-brown, coxae and trochanter uniformly yellow. Leg formula 1423, similar to female. Pedipalp with a broad and basally subtruncate embolar base, embolus long, nearly circling around tegulum, terminal apophysis with two apical processes and bears an elongate apically rounded structure adjacent to embolar base. Tibia of pedipalp longer than wide, broadest apically and constricted before base.

Natural history: Commonly collected at the base of the rice plant from July to April.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., four females and five males, 26 April 1980, T.J. Perfect; Los Baños, IRRI Farm, three males, 15 females, and one spiderling, 18 February 1990, A.T. Barrion; Nueva Ecija Prov., Zaragosa, Jaen, Sta. Rosa Vill., one female, 23 October 1979, A.T. Barrion; Pangasinan Prov., Manaoag, Lipit Vill., one female and one male, 14 September 1978, A.T. Barrion; Batangas Prov., Tanauan, Cale Vill., six males, 16 July 1978, A.T. Barrion; *Panay Is.*, Iloilo Prov., Oton Vill., two females, 12 November 1978, A.T. Barrion; *Mindanao Is.*, South Cotabato, Koronadal Vill., one female, 27 April 1986, A.T. Barrion.

Distribution: Japan, the Philippines, Thailand and Taiwan.

Coleosoma caliothripsum new species
(Fig. 256a–e)

Description:

Female (Fig. 256a–d): Total length 1.58 mm. Cephalothorax 0.68 mm long, 0.50 mm wide, 0.50 mm high.

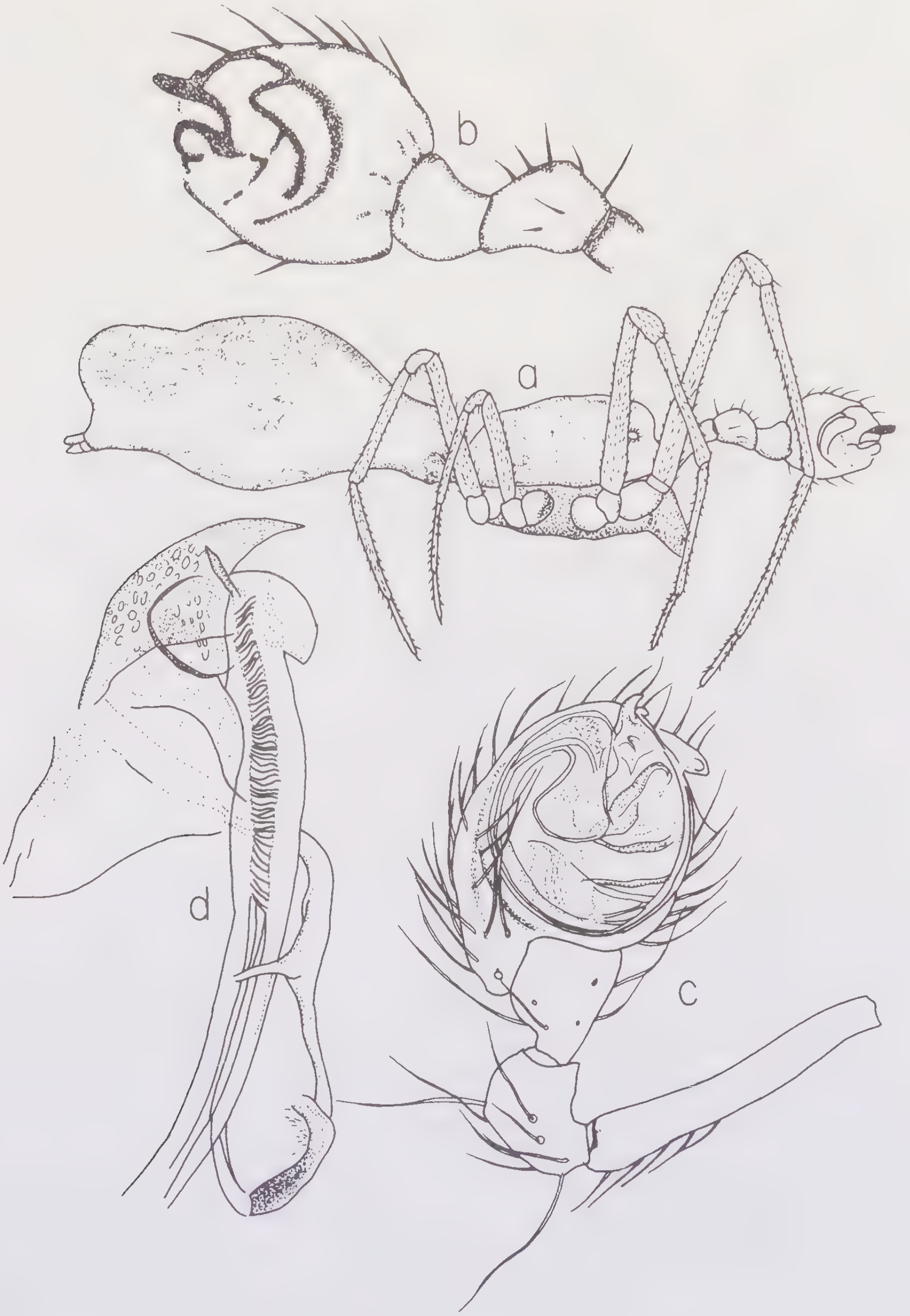


Fig. 255. Male *Coleosoma blandum* Cambridge (a); retrolateral (b) and ventral (c) views of pedipalp; and close-up of palpal organ (d).

Abdomen 0.90 mm long, 0.60 mm wide, 0.75 mm high. Cephalothorax gray-yellow with black eye margins. Cephalic area not elevated, moderately high along fovea posterior to the yellow concave transverse stripe. Eight eyes in two rows, all clear except slightly dull PME, AE more strongly recurved than PE. Eye diameter uniformly 0.05 mm. Eye separation: AME–AME = PME–PME = PME–PLE as long as one AME diameter. ALE–AME 0.6 AME diameter. LE contiguous. Clypeus height very large, 2.6 times AME diameter. Sternum heart-shaped and gray, longer than wide, with a tapered posterior end between coxae IV. Labium slightly gray-yellow with yellow distal border, wider than long. Maxillae gray, with yellow retromargin, broad basally and rather narrowed apically due to yellow retromargin. Chelicerae moderately small, gray with yellow tinge. Legs yellow with black bands in apices of tibiae IV and posterior end of metatarsi IV, trochanter IV, basal one third of femora I promargin, tibia I with one dorsal spine, tibia I d/l = 0.13, l/d = 7.80, and d/b = 0.31, length of spine/diameter of tibia I at insertion = 2.85, metatarsus I/tarsus I = 2.67. Leg formula 1423.

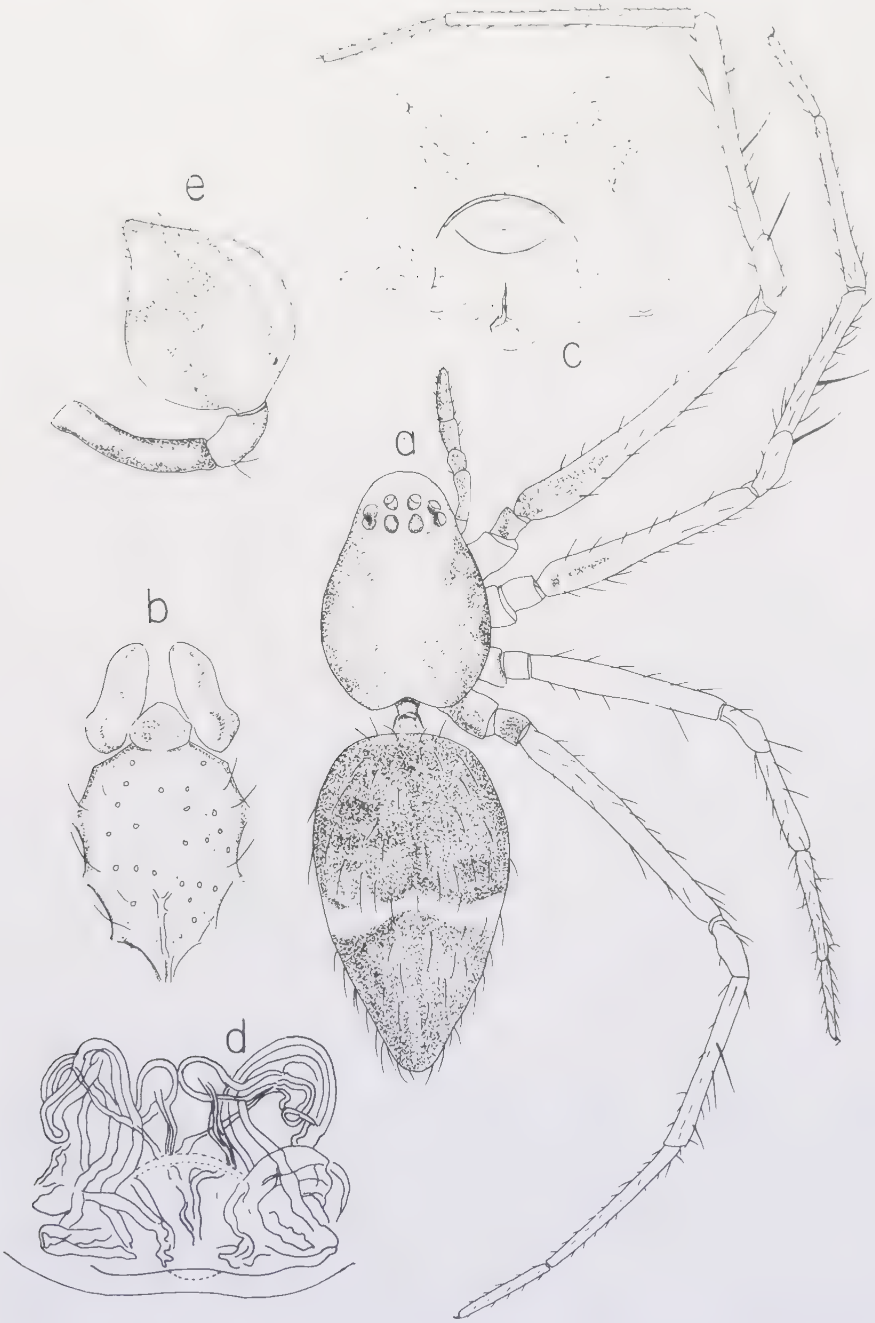


Fig. 256. Female *Coleosoma caliothripsum* n. sp. (a); sternum, labium, and maxillae (b); dorsal (c) ventral (d) views of epigynum; and left palp of subadult male (e).

Pedipalp black, except yellowish claw, almost as long as tibia I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.08	0.25	0.78	0.88	0.33	3.32
2	0.78	0.23	0.56	0.58	0.35	2.50
3	0.58	0.20	0.34	0.43	0.33	1.88
4	1.00	0.23	0.70	0.68	0.35	2.96
Pedipalp	0.25	0.10	0.11	–	0.28	0.74

Abdomen black, except transverse whitish yellow dorsal band and subrectangular yellow lateral band, posterior end tubercle-like, laterally subtriangular with yellow spinnerets, venter uniformly black except reddish brown epigynum. Epigynum bulbous, median area like a circular plate with a longitudinal slit diverging at both ends, posterior end with small circular orifice and a narrow scape-like structure further below it, middle anterior end of circular plate cup-shaped and open to the anterior epigynal margin, spermathecal sac globular, and fertilization tube curved in the apical one third before reaching the sac.

Immature male (Fig. 256e): Uniformly grayish black in the cephalothorax, including sternum and pedipalps,

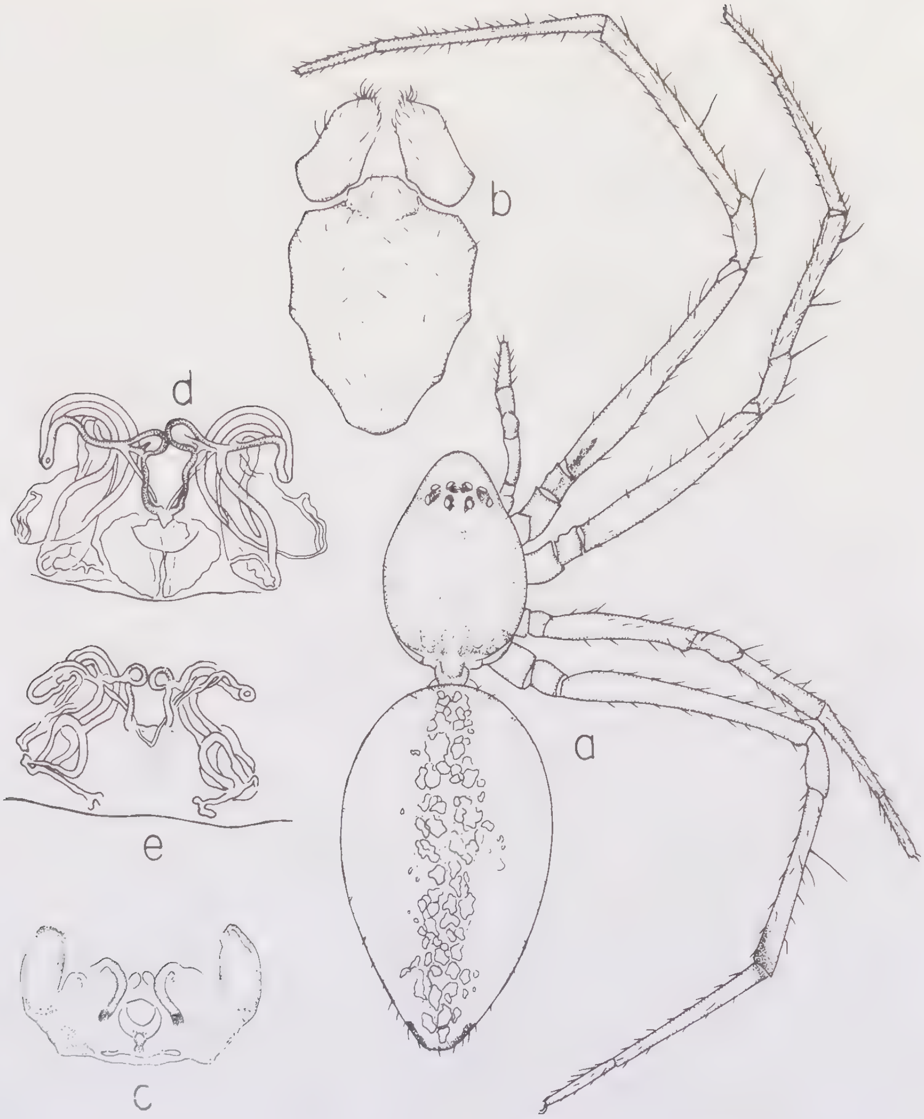


Fig. 257. Female *Coleosoma pseudoblandum* n. sp. (a); sternum, labium, and maxillae (b); and dorsal (c) and ventral (de) views of epgigynum.

and abdomen except for the squarish yellow lateral band, all legs uniformly yellow, tibia I with two dorsal spines.

Etymology: The species name was taken from the prey of the spider, *Caliothrips* (a thrip genus) + um.

Natural history: Two specimens, one female and one immature male, were collected from underneath *Zea mays* leaf infested with thrips in April. They are thrip predators.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Koronadal, Esperanza Vill. holotype female, 19 April 1986, A.T. Barrion, paratype one immature male and a spiderling, same data as holotype.

Distribution: Philippines.

Coleosoma pseudoblandum new species
(Fig. 257a–e)

Description:

Female: Total length 2.49 mm. Cephalothorax 0.84 mm long, 0.60 mm wide, 0.50 mm high. Abdomen 1.65 mm long, 1.00 mm wide, 1.15 mm high. Cephalothorax brown with black eye margins and posterior margins. Cephalic area moderately higher than the cephalic area. Eight eyes in two rows, AE strongly recurved and PE almost straight. Eye diameter (mm): ALE = AME = 0.05, PME = PLE = 0.04. Eye separation: AME–AME = AME–ALE as long as one PME diameter, one fifth shorter than one AME. PME–PME = PME–PLE as long as one AME diameter. LE contiguous. Clypeus height very large, three times AME diameter. Sternum brown, heart-shaped, and as long as wide, lateral margins between coxae I and II slightly extended outward, posterior end rounded between coxae IV. Labium gray-brown and distinctly wider than long. Maxillae yellowish brown, longer than wide, apices strongly converging. Chelicerae small, yellow-brown with gray tinge, promargin with three teeth. Legs yellow with black rings or bands in the apices of tibiae IV, bases of metatarsi IV, and basal promargin of femora I, tibia I with two dorsal spines, tibia I d/l = 0.11, length of tibial spine in leg I = 3.13, metatarsus I/tarsus I = 2.50. Leg formula 1423. Pedipalp blackish brown, nearly as long as femora I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.16	0.28	0.93	1.00	0.40	3.77
2	0.88	0.26	0.63	0.63	0.38	2.78
3	0.70	0.20	0.38	0.48	0.33	2.09
4	1.15	0.29	0.80	0.75	0.35	3.34
Pedipalp	0.33	0.11	0.15	–	0.30	0.89

Abdomen longer than wide and pointed posteriorly, forming a black tubercle, yellow with a chalk-white median longitudinal band. Laterally subtriangular, black along the anterior and posterior of spinnerets and along lateral margin of epigynum. Epigynum with a cup-shaped median sclerotized plate and a circular orifice on its anterior.

Etymology: Derived from its closeness to *C. blandum* without actually being *C. blandum*.

Natural history: Isolated from a soybean leaf floating on top of picric acid used in a pitfall trap set in a *Glycine max* field in March and in ricefield from July to September.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato, Koronadal, Morales Vill., holotype female, 3 March 1983, A.T. Barrion and A. Alviola, seven paratype spiderlings, same data as holotype, *Luzon Is.*, Batangas Prov., Tanauan, Cale Vill., one female and two spiderlings, paratypes, 17 July 1986, A.T. Barrion; Pangasinan Prov., Bani-Bolinao Boundary, Vill. Dos, one female, 23 September 1982, A.T. Barrion.

Distribution: Philippines.

Coleosoma saispotum new species
(Fig. 258a–l)

Description:

Male: Total length 2.18 mm. Cephalothorax 0.88 mm long, 0.60 mm wide, 0.53 mm high. Abdomen 1.30 mm long, 0.50 mm wide, 0.55 mm high. Cephalothorax yellowish brown, except gray lateral margins and black eye rings, cephalic area only slightly higher than the thoracic area. Fovea indistinct. Eight eyes in two rows, AE strongly recurved and PE straight. Eye diameter (mm): PME = ALE = PLE = 0.05, AME = 0.04. Eye separations: AME–AME as long as one AME diameter, AME–ALE one fourth narrower than one AME diameter, PME–PME = PME–PLE as long as one PME diameter. LE contiguous. Clypeus height large, 3.25 times AME diameter. Sternum yellow, with grayish margins, longer than wide, narrowed posteriorly between coxae IV. Labium brown and wider than long. Maxillae yellowish brown, longer than wide, and towards each other distally. Chelicerae moderately robust subbasally, yellow with gray specks, promargin with a minute bifurcated tooth. Legs yellow except the black ring in the apices of tibiae I, II, and IV, tibia I d/l = 0.11, metatarsus I/tarsus I = 0.98, Tm I = 0.59, tibia I with a strong middorsal spine. Leg formula 1423. Pedipalp brown with gray tinges in the cymbium, subtegulum narrow with a pit-like process at base, terminal apophysis strongly lanceolate, tegular apophysis with two minute subapical teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.00	0.28	0.95	0.93	0.45	3.61
2	0.73	0.23	0.65	0.66	0.40	2.67
3	0.59	0.20	0.43	0.48	0.35	2.05
4	0.98	0.25	0.79	0.78	0.40	3.20
Pedipalp	0.33	0.14	0.13	–	0.30	0.90

Abdomen whitish yellow with three pairs of elongate black spots and a pair of long longitudinal bands latero-apically, anterior margin deeply cleft at median with the humps extended over the cephalothorax. Sides of abdomen with a diagonal sclerotization (scutum-like) extended ventrally. Spinnerets with black to gray margins.

Etymology: Named after six spots in abdomen: in Tagalog, six = 'sais' + spot.

Natural history: The holotype male was isolated from pan trap collection and paratypes were collected by aspirator from the ground level of ratoon rice in September to December.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, holotype male, 16 November 1979, A.T. Barrion, paratypes, two males, same locality data as holotype, 20 December 1980, A.T. Barrion, Pangasinan Prov., Bani, San Rafael Vill., one male, 22 September 1982, M. Oferio.

Distribution: Philippines.

Coleosoma pabilogum new species
(Fig. 259a–f)

Description:

Male: Total length 1.96 mm. Cephalothorax 0.76 mm long, 0.76 mm wide, 0.48 mm high. Abdomen 1.20 mm long, 1.20 mm wide, 0.76 mm high. Cephalothorax grayish brown, ovoid, and widest above coxa II, fovea absent with four adjacent striae, lateral margins yellow, and clypeus brown. Ocular area elevated and higher than thoracic area, cavity below AE produced by the broad and sloping clypeus. Eyes clear except partially white PME. Eight eyes in two rows, AE row recurved and nearly as long (0.23 mm) as slightly procurved PE row

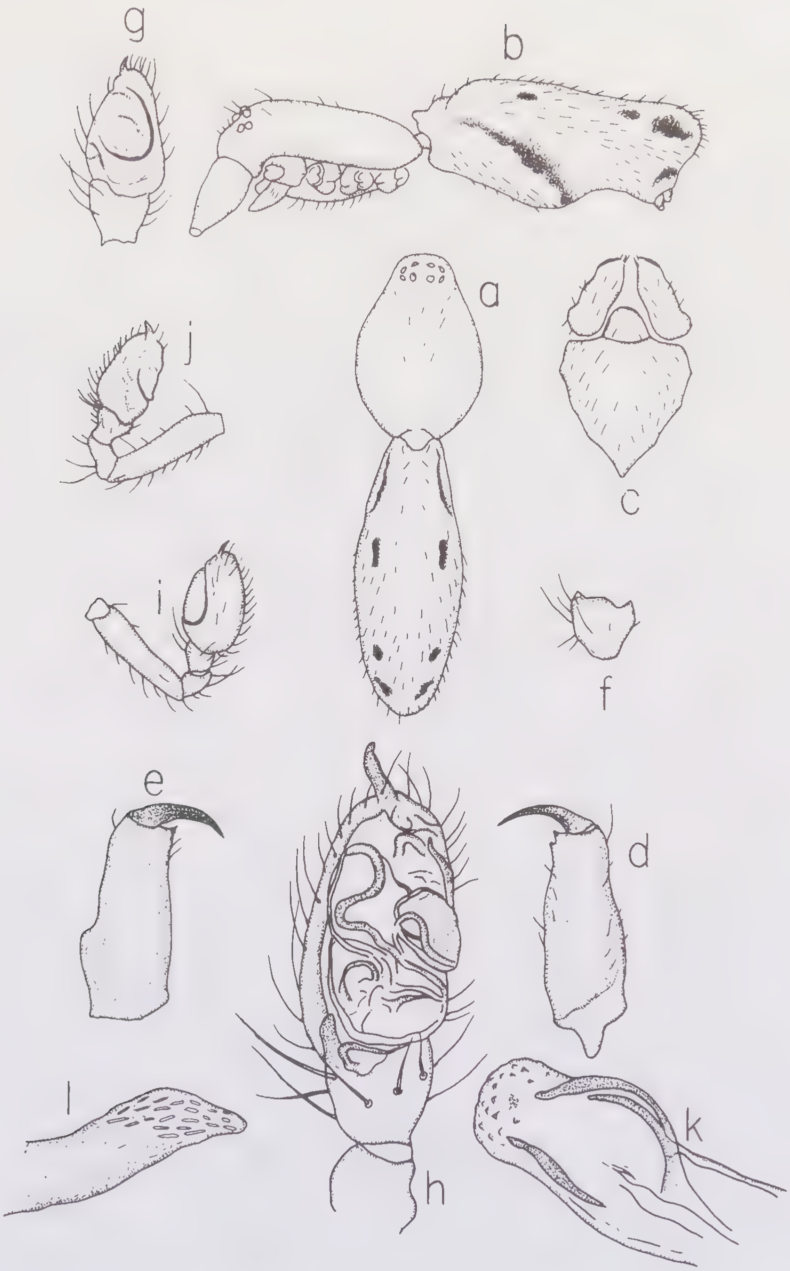


Fig. 258. Male *Coleosoma saispotum* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); ventrolateral (d) and dorsolateral (e) views of right chelicera; pedipalp's tibia (f); ventral view of uncleared (g) and cleared (h) palpal organ; lateral view of pedipalp (ij); tegular apophysis (k); and terminal apophysis (l).

(0.24 mm). Eye diameters (mm): PME = PLE = 0.04, AME = ALE = 0.03. AME–AME separation 1.7 AME diameter. AME–ALE separation one AME diameter. PME–PME separation 1.3 PME diameter. PME–PLE separation 1.5 PME diameter. Lateral eyes contiguous. Clypeus height nearly five times AME diameter. Sternum black, heart-shaped with contiguous labium, lateral edge of distal border diagonal, margins opposite coxae straight or partially indented, posterior end tapers to a blunt tip. Maxillae porrect, longer than wide, base broader than anterior end, converging towards apex. Chelicerae yellowish brown with an acutely pointed base, toothless marginally, fangs with a small arm basally. Legs slender, yellowish brown with gray tinges, especially in legs II–IV, leg segment ratios: length/diameter (l/d) of tibiae I = 12.05, II = 8, III = 5.71, IV = 9, metatarsus I/tarsus I = 2.38, tarsi three-clawed with zero and zero or one tooth in the inferior and superior claw, respectively. Leg formula 1423. Pedipalp dirty brown, femur three times longer than the equally long patellae and tibiae, retrolateral basal one fourth of tibia curved, with the apical end pointed downwards, base of cymbium extended to apical two thirds of tibiae with their midlateral bases concave, tegular apophyses prominent.

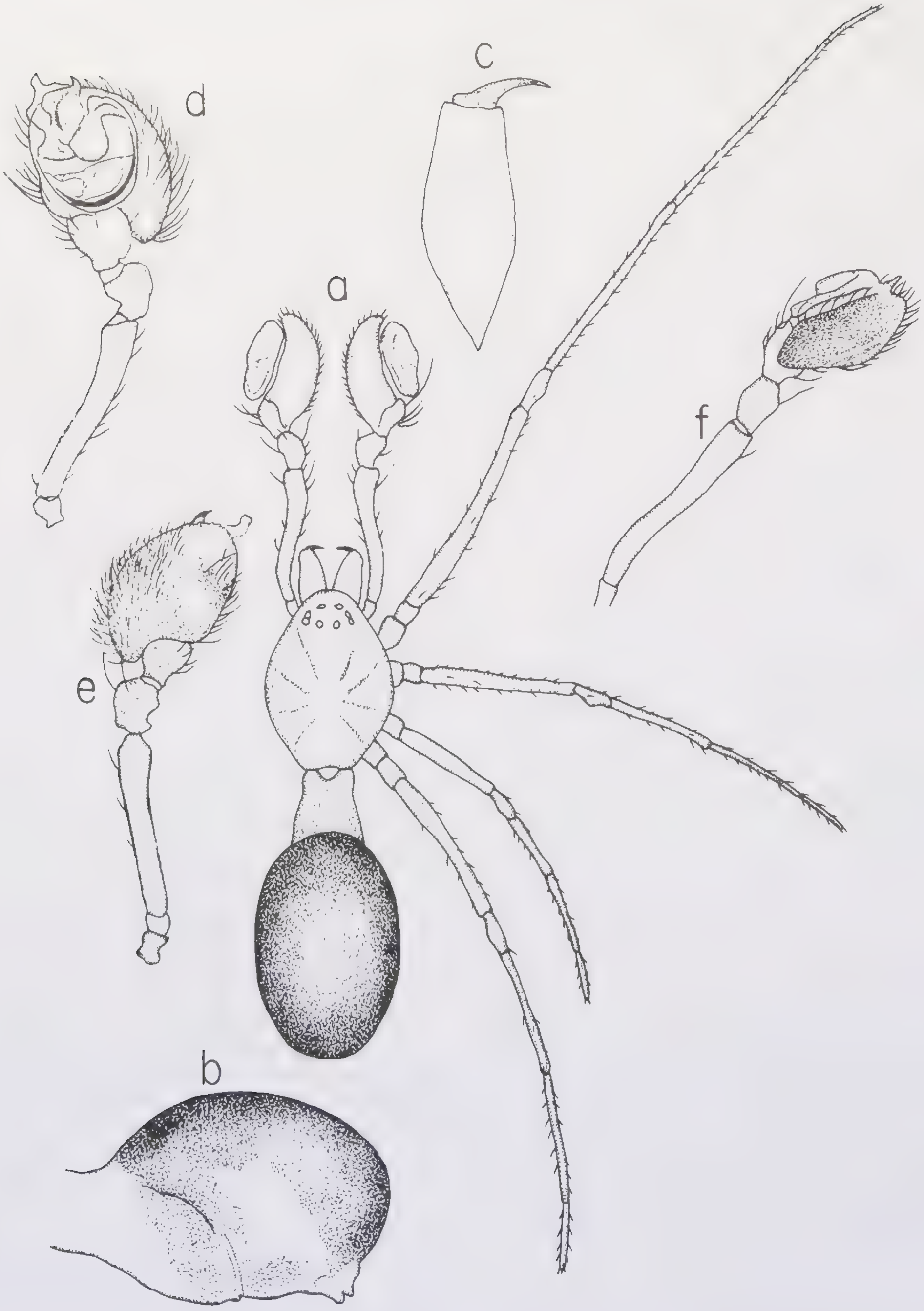


Fig. 259. Male *Coleosoma pabilogum* n. sp. (a); side view of abdomen (b); chelicera (c); and ventral (d) and lateral (ef) views of epigynum.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.14	0.26	0.94	1.00	0.42	3.76
2	0.90	0.24	0.72	0.70	0.36	2.92
3	0.62	0.18	0.40	0.46	0.32	1.98
4	0.98	0.25	0.72	0.75	0.34	3.04

Abdomen button- or knob-like, black to gray-brown, except the narrow yellow to orange-brown anterior and yellow broad spot midlaterally, projected towards spinnerets, distal end heavily sclerotized with a deep median cleft. Spinnerets brown, small, and directed diagonally outward, not visible dorsally.

Etymology: The species name was derived from a Tagalog term 'pabilog' which means button-like.

Variation: The body length ranged from 1.92 to 1.96.

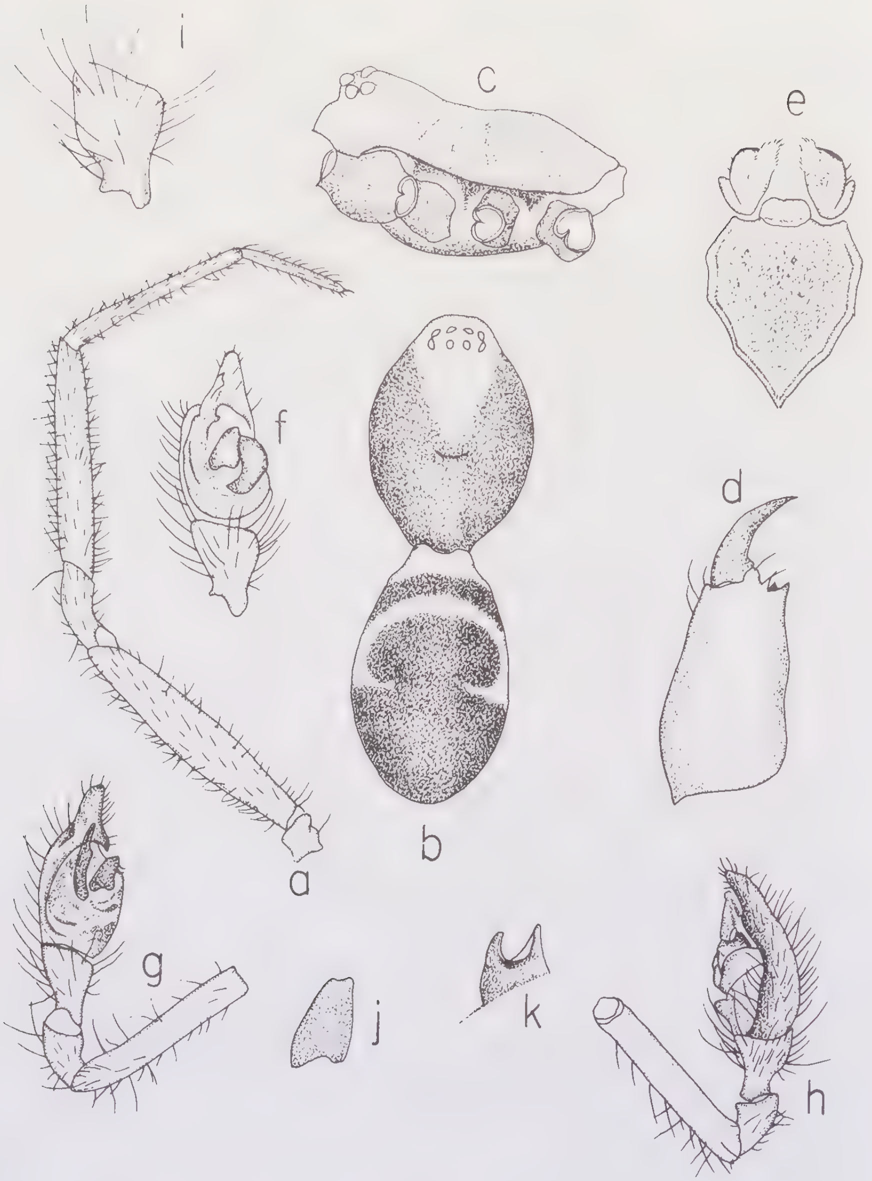


Fig. 260. Male *Coleosoma matinikum* n. sp., leg I (a); habitus (b); side view of cephalothorax (c); chelicera (d); sternum, labium, and maxillae (e); ventral (fg) and retrolateral (h) views of pedipalp; pedipalp's tibia (i); and ventral (j) and retrolateral (k) views of median apophysis.

The paratype male had a broader and longer anterior portion of abdomen orange-brown and more globular.

Natural history: Two males and a penultimate male were collected in December from a water pan trap coated with vegetable oil set over a kerosene powered light trap. These spiders must have been blown by the wind into the pan.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 12 December 1984, A.T. Barrion; paratype one male and one penultimate male, same data as holotype.

Distribution: Philippines.

Coleosoma matinikum new species
(Fig. 260a–k)

Description:

Male: Total length 4.83 mm. Cephalothorax 2.13 mm long, 1.63 mm wide, 1.20 mm high. Abdomen 2.10 mm long, 1.20 mm wide, 1.50 mm high. Cephalothorax reddish brown, coarse, and with short hairs, cephalic area slightly elevated, yellow posterior of PME tapering to a point in the transverse fovea, lateral margins serrated but to lesser degree towards the cephalic margin. Eight clear eyes in two rows and evenly spaced, AE strongly recurved, PE almost straight to slightly recurved. Eye diameter (mm): ALE = 0.15, PME = 0.13, AME = PLE = 0.10. Eye separation even: AME–AME =

AME–ALE = PME–PME = PME–PLE = 0.8 AME diameter. ALE and PLE contiguous. Clypeus height large, 2.5 times AME diameter. Sternum dark brown, heart-shaped, moderately thickened along lateral margins, pointed posteriorly between coxae IV, and with three concavities anteriorly. Labium same color as sternum and maxillae, wider than long (8 : 5). Maxillae longer than wide and slightly projected towards each other. Chelicerae small, slightly robust, retromargin toothless, and promargin with two teeth. Legs uniformly yellow-brown without strong spines, femora I, femora II, and tibiae I with peg-like or small teeth. Leg formula 4123. Pedipalp's tibia with long hairs, 1.4 times wider than its base, radix shorter than femur I, apex very thin and slender, median apophysis stout basally and slightly blunt apically in ventral view, deeply grooved retrolaterally, conductor blunt at apex but without groove internally.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.73	0.83	1.13	1.18	1.03	6.90
2	2.00	0.63	1.50	1.50	0.75	6.38
3	1.65	0.60	1.10	1.11	0.60	5.06
4	2.53	0.83	1.95	1.88	0.80	7.99
Pedipalp	0.91	0.38	0.28	–	0.73	2.30

Abdomen twice longer than wide, black with two transverse white bands in the apical one half, notched along apicomedian area, two white spots below the submedian and a longitudinal white band posterior to the white spots. Spinnerets not visible dorsally.

Etymology: Derived from the spinous character ('matinik' in Tagalog) of leg I.

Natural history: A single male was found in August associated with rice root aphid, *Tetraneura nigriabdominalis*. We presume it is a predator of rice root aphid.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 29 July 1984, A.T. Barrion.

Distribution: Philippines.

Genus *Achaearanea* Strand

Achaearanea Strand, 1929. Zool. & Palaentol. Nomencl. Notes, Act. Univ. Latviensis 20: 17.

Members of this cosmopolitan genus are small to large comb-footed spiders with slightly procurved AE row; PE row slightly recurved or straight; subequal eye diameter; squarish median ocular area; abdomen higher than long; colulus and paired setae absent; moderately long legs with spines and many hairs and leg formula 1432 in females and 1234 in males.

Achaearanea Strand, 1929 are web-spinners. The web appears as an irregular networks of fine threads built commonly in hidden or sheltered habitats. The genus is preponderantly distributed in Central and South America with few described species in the Old World.

It is often confused with the genus *Theridion* Walckenaer with straight to procurved AE row, straight PE row, no colulus, and similar body size (1 to 5 mm long).

Achaearanea brookesiana new species
(Fig. 261a–g)

Description:

Female: Total length 4.70 mm. Cephalothorax 1.35 mm long, 1.25 mm wide, 1.10 mm high. Abdomen 3.35 mm long, 2.40 mm wide, 2.50 mm high. Cephalothorax light brown with black eye margins, cephalic area narrower than the thoracic area, long hairs present behind PE towards fovea and in between PME and PLE. Eight eyes homogeneous and clear, in two rows, AE strongly recurved, and PE very moderately recurved. Eye diameter (mm): AME = PLE = 0.13, ALE = PME = 0.10. Eye separation: AME–AME 0.6 eye diameter, ALE–AME ca. one third AME or one half ALE diameter, PME–PME as long as one PME diameter, PME–PLE 0.8 PME diameter. MOQ square. Clypeus height large, almost twice AME diameter. Sternum brown with a black spot at center, slightly longer than wide (0.78 : 0.75 mm), posterior end blunt between coxae IV, anterior end straight to moderately concave. Labium same color as sternum, except yellow distal ends, wider than long. Maxillae yellow retromarginally with dark brownish red apical border, longer than wide, and slightly convergent towards apex. Chelicerae yellow, promargin with a single tooth. Legs moderately slender, brown with yellowish brown femora, apex of tibia IV with a blackish brown ring, leg formula 1423. Pedipalp yellow except brownish yellow tarsi, patella with two long dorsal setae and one long dorsal seta in the tibia subapically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.00	0.70	1.60	1.90	0.75	6.95
2	1.45	0.55	1.00	1.35	0.63	4.98
3	1.05	0.50	0.70	0.95	0.50	3.70
4	1.65	0.60	1.15	1.55	0.70	5.65
Pedipalp	0.35	0.15	0.20	–	0.45	1.15

Abdomen yellowish brown, with median white band in the posterior one half and diverging to a U-shaped band after the median black spot, extended along margins of the cardiac area, the white bands branched twice laterally, subglobular dorsally, subanal area with a broad black spot. Laterally, the abdomen has two brownish bands, posterior band extended to the spinnerets. Spinnerets of unequal sizes, anterior pair larger than the posterior pair. Epigynum with a wide circular orifice, apical rim of orifice very short, arm of spermathecal receptacle moderately long, curved, and extended to circular orifice.

Etymology: Derived from the type locality.

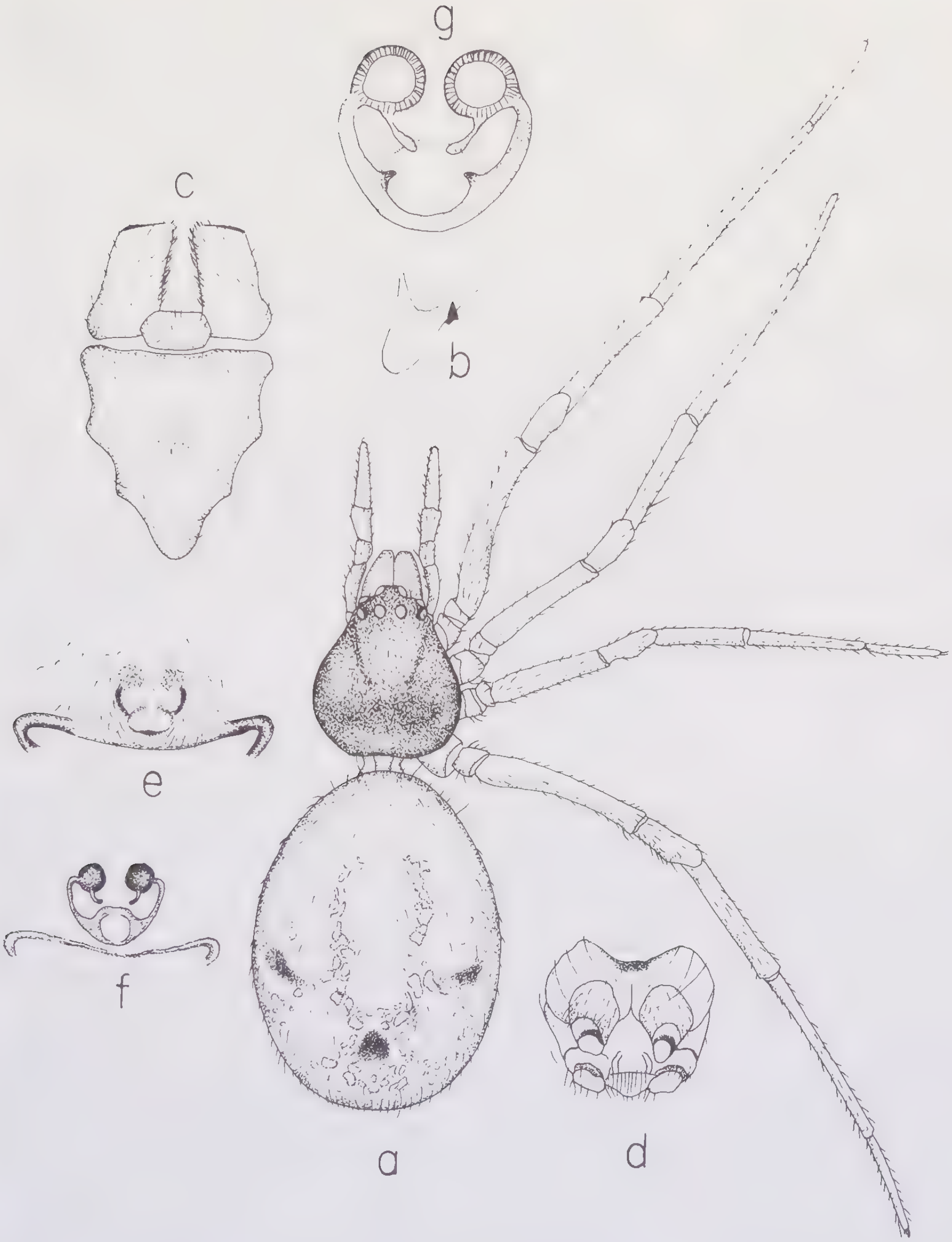


Fig. 261. Female *Achaearanea brookesiana* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); spinnerets (d); and dorsal (ef) and ventral (g) views of epigynum.

Natural history: Found inside the clump of rice tillers at reproductive stage in October.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Brookes Pt., holotype male and one spiderling, 1 October 1987, A.T. Barrion.
Distribution: Philippines.

Genus *Achaearyopa* New Genus

Description:
Male: Small spider, 3.64 mm long. Generally black, with yellow spineless legs. Carapace moderately high anteriorly, not squarish in lateral view, with cephalic area slightly higher than the thoracic area. Eyes large, diameter in decreasing order: AME > ALE = PME > PLE. AME more widely separated than the PME. ALE–AME closer to each other than AME–AME. PME–PME nearer each other than PLE–PME. AE strongly recurved, PE straight to slightly recurved. MOQ wider in front than behind, posterior width as long as height. Clypeus height very large, longer than one AME diameter, barely 0.42 length of feeble chelicerae. Clypeus width as long as chelicerae. Chelicerae without stridulating apparatus, promargin with two strong teeth and a minute one located at the base of the basal tooth, fang with ca. 27 serrations. Sternum slightly wider than long and broadly produced between coxae IV. Legs without strong spines, metatarsi longer than tarsi, tibia

I l/d = 7.33 and metatarsus I/tarsus I = 1.36. Tarsal claw moderately sickle-shaped, superior claw each with two or three strong teeth. Tm I = 0.32 and trichobothrium difficult to see. Leg formula 1423. Abdomen subglobose without folium but with a pair of white spots. Colulus and paired setae absent. Epigynum with a broad posterior plate and narrow circular lateral openings.

Type species: *Achaearyopa pnaca* n. sp.
Diagnosis: *Achaeareuryopa* runs close to *Euryopis* but differs from the latter in having the sternum blunt posteriorly, clypeus much shorter than the length of chelicerae, Tm I < 0.50, longer tibia I l/d > 7.00, shorter fang, and ratio of metatarsus I/tarsus I. It is related to *Theridion* in terms of Tm I value and sternum produced between coxae IV. However, the new genus has the AME larger than ALE, unlike in *Theridion* where the ME are smaller than the LE.
Etymology: The new genus name was a combination of *Achaear* from *Achaearanea* and *Yop* from *Euryopis* in feminine gender.

Achaearyopa pnaca new species
(Fig. 262a–i)

Description:
Female: Total length 3.64 mm. Cephalothorax 1.16 mm long, 0.80 mm wide, 0.42 mm high. Abdomen 2.48 mm long, 2.02 mm wide, 2.00 mm high. Cephalothorax moderately high, blackish brown with black longitudinal stripes, running from posterior end of PLE, extended to the subbasal region of thoracic area. Eight eyes in two rows, AE strongly recurved and PE straight to slightly recurved. Eye diameter (mm): AME = 0.13, ALE = PME = 0.08, PLE = 0.06. Eye separations: AME–AME one third shorter than one AME diameter, ALE–AME ca. 0.3 AME diameter or one half ALE diameter, PME–PME one fourth shorter than one PME diameter and less than one half AME diameter, PME–PLE 1.25 times PME diameter. Clypeus height very large, 1.2 times AME diameter, and less than one half of cheliceral length (0.15 : 0.36 mm). Sternum wider than long, broadly produced posteriorly between coxae IV. Labium same color as sternum, except pale yellow distal margins, wider than long. Maxillae distinctly longer than wide, moderately converging, blackish brown except yellow retromargin. Chelicerae weak, promargin with two large teeth and a small tooth near base of the posterior tooth. Legs uniformly yellow with light brown hairs, without strong spines, metatarsi longer than tarsi, tibia I l/d = 7.33, metatarsus I/tarsus I = 1.36, Tm I = 0.32, tarsal claw moderately sickle-shaped with two or three teeth in each of the superior claws. Leg formula 1423.

Abdomen subglobular, longer than wide and high, black with a pair of subovate yellow spots subposterolaterally. Anterior spinnerets moderately separated at base, segments I parallel to each other in top view. Colulus and paired setae absent. Tracheal spiracle transversely C-shaped. Epigynum a transverse sclerotized plate tapered laterally, posterior plate broad with narrow lateral openings. Spermathecae subspherical and diverging apically.

Length of leg and pedipalp segment (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.16	0.34	0.88	0.76	0.56	3.70
2	0.96	0.34	0.56	0.52	0.44	2.82
3	0.60	0.28	0.40	0.40	0.36	2.04
4	1.04	0.36	0.68	0.66	0.48	3.22
Pedipalp	0.27	0.14	0.20	–	0.25	0.86

Etymology: Named after the Palawan National Agricultural College (PNAC).
Natural history: Three specimens (two females and a spiderling) were collected underneath maize leaves, associated with corn thrips *Caliothrips* sp.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Aborlan, PNAC field, holotype female, 30 September 1987, A.T. Barrion; one female (with collapsed abdomen) and one spiderling paratypes, same data as holotype.
Distribution: Philippines.

Genus *Landoppo* New Genus

Description: Carapace normal without lobe(s) or sulci on cephalic region, median bears a broad dark gray arrow-like band with seven striae, posterior end of thorax sloping and grooved medially. Eight eyes in two rows, AE row strongly recurved but shorter than the straight PE row. Eye diameters (mm) in decreasing order: AME = 0.09, PME = PLE = 0.08, ALE = 0.06. AME–AME separation two thirds AME diameter. AME–ALE separation one third AME diameter. PME–PME separation one half PME diameter. PME–PLE separation three fourths PME diameter. LE almost touching each other. Median ocular quadrangle wide anteriorly and narrow posteriorly. Clypeus height twice AME separation and bears two ovoid, transverse humps. Sternum wider than long, posterior end almost truncated and extended/produced between coxae IV, hirsute, with circular yellow spots at base of hair. Labium as long as wide, not rebordered but strongly recurved distally and prominently procurved basally. Maxillae longer than wide, distally converging and basally diverging, ventrolateral part provided with a large spike-like apophysis directed vertically. Chelicerae vertical with a bifurcated promarginal tooth, retromargin toothless. Leg formula 1243. Tibia with two dorsal spines each, except tibia III with only one. Leg segment ratios: tibia I l/d = 13.06, position of first and second dorsal spine 0.37 and 0.82, respectively. Metatarsus I/tarsus I = 2.38. Length of leg I/length of cephalothorax = 5.84. Tm I = 0.38. Pedipalps yellow with brown cymbium, bases of femur with an apophysis-like structure directed ventrally, tibia with a trichobothrium and with traces of RTA, embolus long and

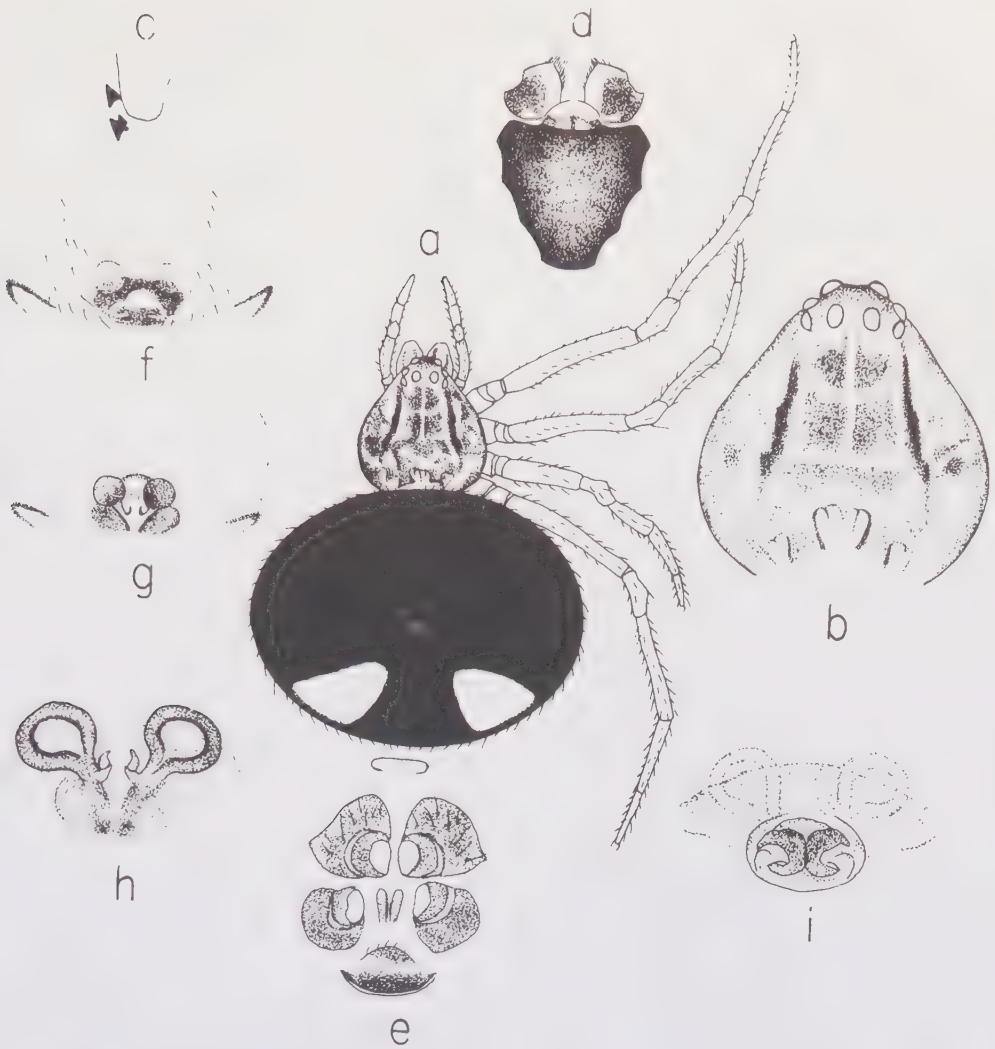


Fig. 262. Female *Achaearyopa pnaca* n. gen. and sp. (a); carapace (b); cheliceral teeth (c); sternum, labium, and maxillae (d); spinnerets (e); and dorsal view of uncleared (f) and cleared (g) and ventral view of uncleared (h) and cleared (i) epigynum.

coiled, dorsobasal part of cymbium slightly cleft.

Abdomen subglobular, medially grooved anteriorly, laterals with wavy bands of alternating black and yellow patches, venter with a strongly recurved epigastric fold and a median transverse ridge between fold and spinnerets. Colulus and paired setae absent.

Gender: Masculine.

Type species: *Landoppo misamisoriensis* n. sp.

Etymology: *Landoppo* is derived from the common name of Mindanao Is., the 'Land of Opportunity'.

***Landoppo misamisoriensis* new species**
(Fig. 263a–h)

Description:

Male: Total length 1.44 mm. Cephalothorax 0.64 mm long, 0.56 mm wide, 0.44 mm high. Abdomen 0.80 mm long, 0.62 mm wide, 0.58 mm high. Cephalothorax pale grayish yellow, a broad dark gray arrow-like band with seven long striae or lines prominent dorsally, eye margins reddish brown, posterior end of thorax sloping, and grooved medially. Eight eyes in two rows, AE row strongly recurved, PE row straight; eye lengths (mm): AE (0.34) < PE (0.35), eye diameters (mm) in decreasing order: AME = 0.09, PLE = PME = 0.08, ALE = 0.06. AME–AME separation two thirds eye AME diameter. AME–ALE separation one third ALE diameter. PME–PME separation one half PME diameter. PME–PLE separation three fourths PME diameter. LE with a hairline separation. Median ocular quadrangle wider in front (0.24 mm) than behind (0.20 mm). Clypeus height twice AME separation and bears transversely a pair of ovoid humps. Sternum black, end convex, wider (0.40 mm) than long (0.34 mm), broadest opposite coxae II, median

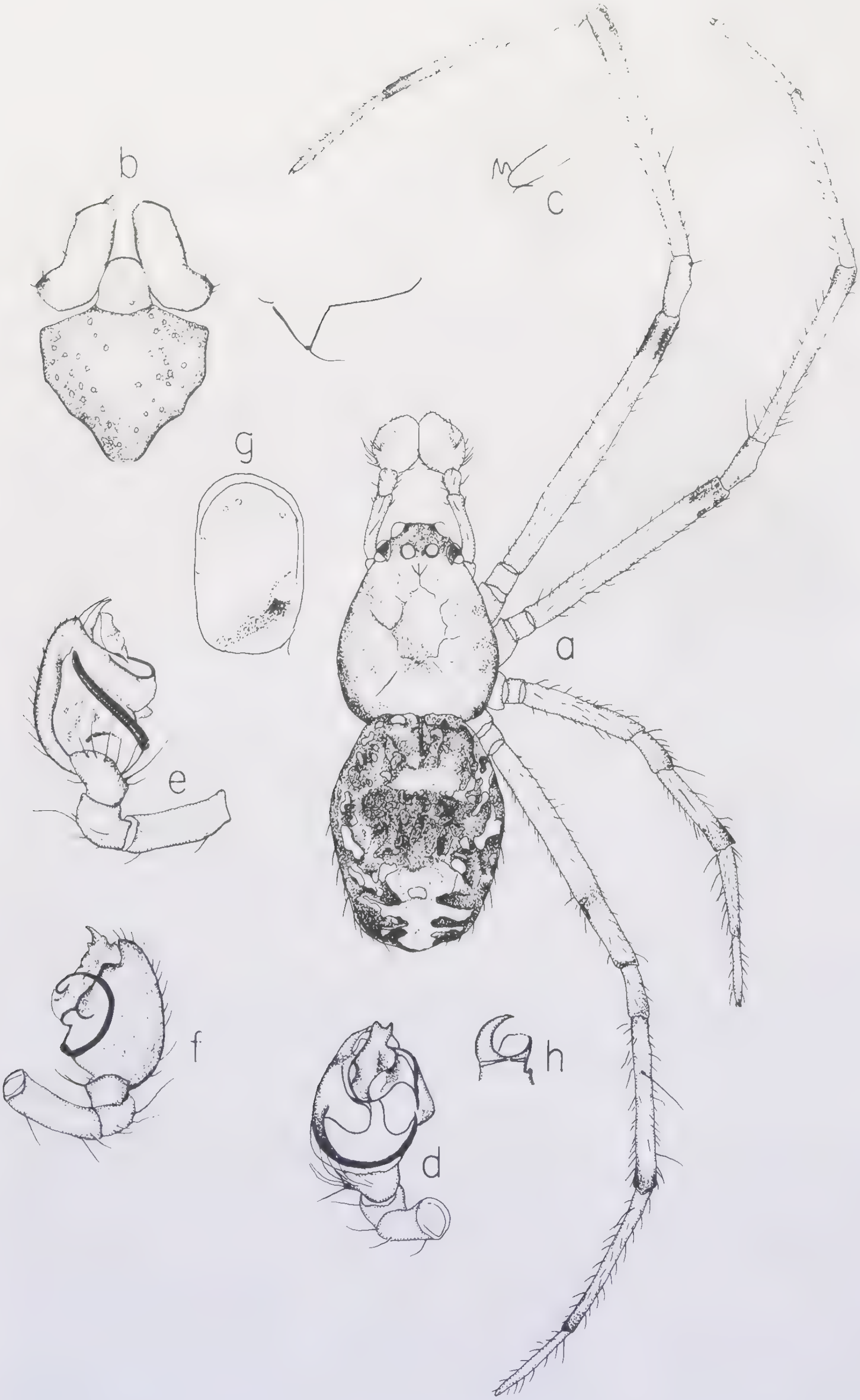


Fig. 263. Male *Landoppo misamisoriensis* n. gen. and sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); ventral (d) and lateral (ef) views of pedipalp; inner side of empty cymbium (g); and median apophysis (h).

apical end concave for the base of labium, posterior end nearly truncated and produced between coxa IV, rather hirsute with bases yellow (as if punctated without hairs). Labium reddish brown, as long (0.14 mm) as wide (0.14 mm), and a little above midlength of maxillae, distal end broadly rounded. Maxillae same color as carapace, longer than wide, ventrolateral sides with a large apophysis basally, inner lateral margins brown and highly sclerotized, serrulae and thin scopulae present. Legs relatively long and slender, except leg III, yellow with apical black bands on each leg segment except tarsi, patellae black in legs I and II, dorsal spines in tibiae with two each except for III with only one. Leg segment ratios: tibia I l/d = 13.06, position of first and second dorsal spine in tibia I = 0.37 and 0.82, respectively. Length of first dorsal spine/width I = 2.38, length of leg I/length of cephalothorax = 5.84, length of femur I/length of cephalothorax = 1.72, Tm I = 0.38. Metatarsus I/tarsus I = 2.38. Tarsi three-clawed with a tooth each in the superior and inferior claws. Leg formula 1243. Pedipalps pale yellow with brown cymbium, base of femur developed to an apophysis-like structure directed ventrally, tibiae with traces of retrolateral tibial apophysis (RTA), a trichobothrium borne in an apophysis-like structure, with five long hairs dorsolateral to it, dorsobasal part of cymbium slightly cleft, embolus long and coiled, tip of conductor claw-like and C-shaped.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.10	0.24	0.98	1.00	0.42	3.74
2	0.78	0.22	0.60	0.62	0.35	2.57
3	0.50	0.18	0.34	0.40	0.26	1.68
4	0.80	0.23	0.60	0.60	0.32	2.55

Abdomen subglobular, black with a transverse white median and T-shaped-like longitudinal band posteriorly, anterior portion grooved along cardiac area, lateral sides with ca. seven to nine undulating bands in alternating yellow and black patches, venter brownish yellow, epigastric fold strongly procurved, median portion with a transverse, recurved ridge, producing two shallow grooves between spinnerets, and an epigastric fold. Spinnerets small, anterior pair larger than posterior pair, basal segment of the anterior broad and close to each other with parallel or touching inner margins, colulus and paired setae absent.

Etymology: The specific epithet was derived from the province Misamis Oriental, the type locality.

Natural history: The only specimen was collected by D-Vac suction in September from a cogon *Imperata cylindrica* grassland.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Mat-i, holotype male, 8 October 1985, A.T. Barrion.

Distribution: Philippines.

Genus *Theridion* Walckenaer

Theridion Walckenaer, 1805. Tableau des Araneides Paris: 72.

? Tobesoa Keyserling, 1889. In Kock, Die Arachn. Austral Nur. 2: 239.

? Liger O.P. Cambridge, 1896. Biol. Centr.-Amer. Arachnida-Araneidae 1: 210.

? Garricola Chamberlin, 1916. Bull. Mus Comp. Zool. 60: 231.

Allotheridion Archer, 1946. Paper Alabama Mus. Nat. Hist. 22: 41.

Allodipoena Bryant, 1947. Psyche 54: 184.

Chindellum Archer, 1950. Paper Alabama Mus. Nat. Hist. 30: 12.

Phylloneta Archer, 1950. Paper Alabama Mus. Nat. Hist. 30: 19.

Nesticodes Archer, 1950. Paper Alabama Mus. Nat. Hist. 30: 22.

The genus *Theridion* Walckenaer is distributed worldwide and members of the genus are small to medium-sized (1–5 mm long) comb-footed spiders. They possess slightly longer than wide carapace without stridulating structures; fovea indistinct; AE row straight or procurved as viewed frontally; PE row straight as seen dorsally; eyes subequal in size, with AME either slightly larger or smaller than others; coxae IV separated by about 0.5–1.5 their diameters; sternum usually bluntly pointed between coxae IV; enlarged chelicerae present in males; female chelicerae each with one or two teeth in the promargin and retromargin bears no teeth; long-legged, patella I and tibia I at least 1.5 times as long as cephalothorax; leg formula in female 1423 and leg II longer than IV in males; metatarsus I/tarsus I = 1.6–3.6, increases with spider size; Tm I = less than 0.54 mm; abdomen usually spherical, longer than high, sometimes wider than long, subtriangular, without plates or tubercles; colulus absent; female epigynum weakly sclerotized, with indistinct openings, one pair of seminal receptacles present; male pedipalp with distinct median apophysis, conductor, and radix, though vary in positions.

It differs from other theridiid genera like *Enoplognatha* and *Anelosimus* in the absence of colulus.

Theridion impressithorax Simon, 1894 is the only member of the genus recorded in the Philippines.

Theridion bitakum new species
(Fig. 264a–f)

Description:

Female: Total length 8.30 mm. Cephalothorax 2.70 mm wide, 2.18 mm wide, 1.80 mm high. Abdomen 5.60 mm long, 4.00 mm wide, 3.80 mm high. Cephalothorax brown with black flecks and hairs, cephalic much narrower than the thoracic area but distinct, fovea deep. Eight eyes arranged in two rows, all clear and homogeneous. AE strongly recurved and PE slightly procurved.

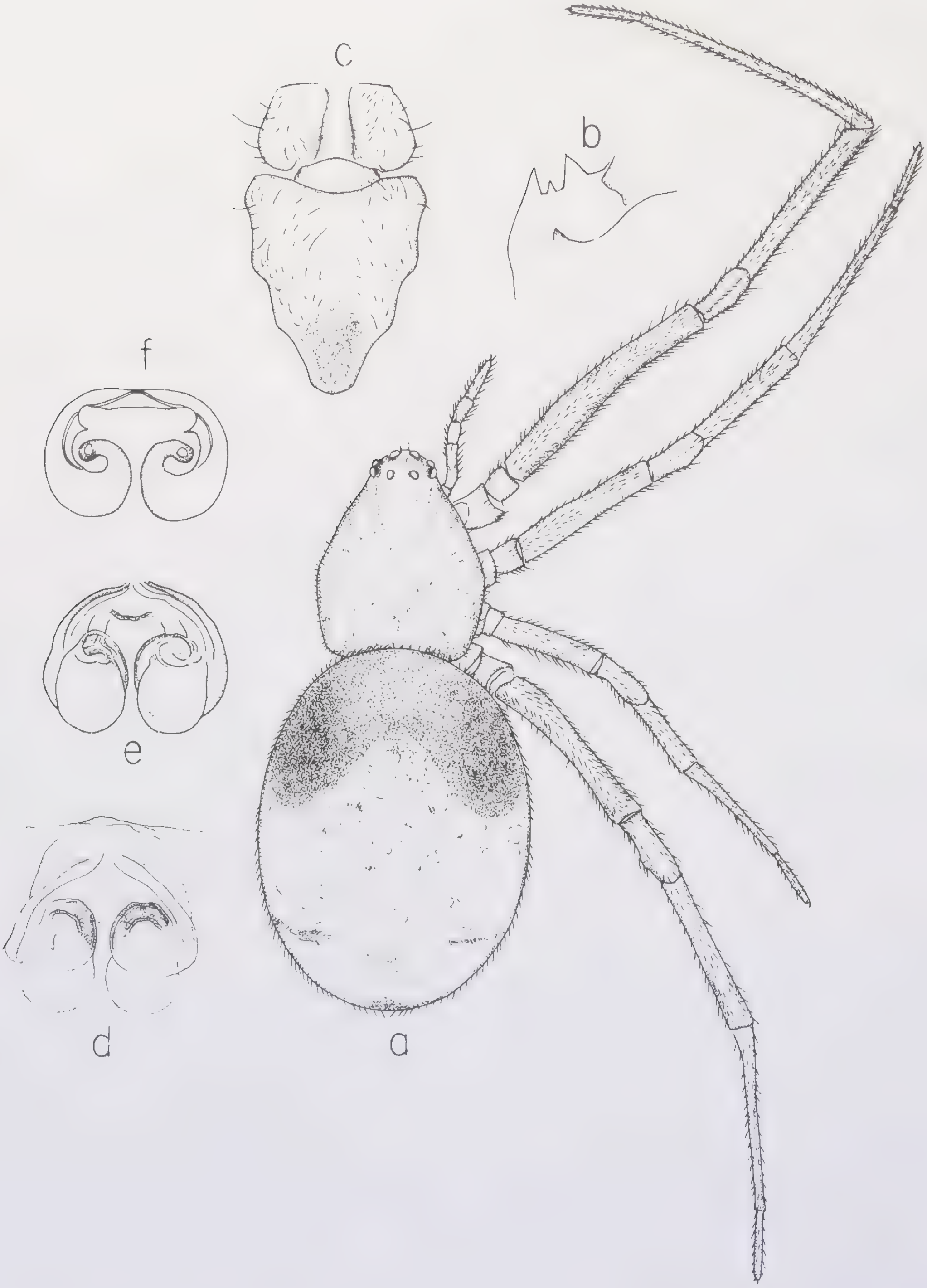


Fig. 264. Female *Theridion bitakum* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (ef) views of epigynum.

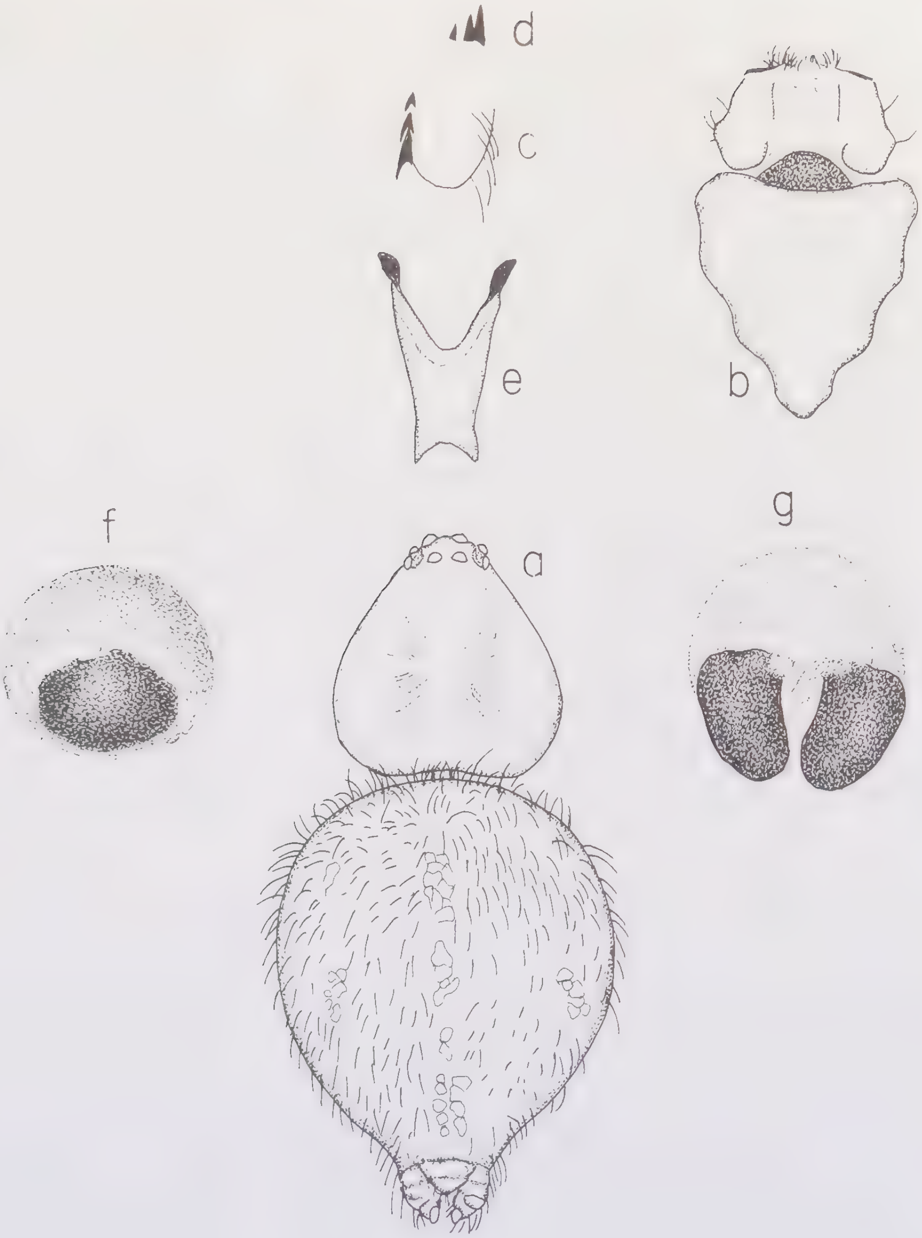


Fig. 265. Female *Theridion necijaensis* (a); sternum, labium, and maxillae (b); cheliceral teeth in ventral (c) and lateral (d) views; pedicel (e); and dorsal (f) and ventral (g) views of uncleared epigynum.

Eye diameter (mm): AME = 0.20, PLE = 0.15, ALE = PME = 0.13. Eye diameter: AME–AME about one half AME diameter, AME–ALE 0.40 AME diameter, PME–PME 0.7 AME diameter, PME–PLE three fourths AME diameter. Clypeus height very large, 2.4 times AME diameter, rounded anterior as viewed dorsally, and grooved transversely below AE. Sternum longer than wide, yellowish brown, with blackish posterior one half and pale black opposite each coxa, posterior end truncated between coxae IV. Labium yellow-brown, similar to maxillae, inverted bell-shape and wider than long. Maxillae distinctly longer than wide, subparallel to each other, retromargin yellow and serrula brown.

Chelicerae moderately robust, yellow-brown with gray flecks frontally, hirsute along the retromargin and base of fang, promargin with three teeth, middle tooth the smallest. Legs long and slender, dark brown to reddish brown, except femur I yellow ventrally, femur IV yellowish medially, basal one half of tibiae II and metatarsi III yellow brown, basal one half of tibiae IV light yellow, apical one third of metatarsi IV black. Tibia I with two weak dorsal spines, a/b = 0.15 and l/d = 6.79. Metatarsus I/tarsus I = 4. Tm I = 0.34. Leg formula 1423. Pedipalp brown, with yellow femur, about as long as femur III, tarsi single-clawed with seven teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.70	1.40	3.60	4.40	1.10	15.20
2	3.40	1.15	2.30	3.00	1.00	10.85
3	2.50	1.00	1.60	2.20	0.90	8.20
4	3.90	1.40	3.00	3.60	1.20	13.10
Pedipalp	0.75	0.38	0.44	–	0.88	2.45

Abdomen ovoid, yellow except black anterior one fourth extended laterally and basally and branching narrowly from venter to lateral at midlength, venter with a white band between epigynum and spinnerets. Spinnerets not visible dorsally, brown with yellow margin followed by black ring. Epigynum double-scroll-like, separated from each other anteriorly, posterior epigynal margin with a minute tongue-like structure, spermathecal sacs spherical, borne in the center of the scroll-like structures in posterior view.

Etymology: Named after the habitat of the species, soil cracks ('bitak' in Tagalog).

Natural history: Three spiders were separately collected from soil cracks along the sides of rice bunds in September.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Aborlan, Cabigaan Vill., holotype female, 30 September 1987, A.T. Barrion, one female and one spiderling paratype, same data as holotype.

Distribution: Philippines.

Theridion necijaensis new species
(Fig. 265a–g)

Description:

Female: Total length 4.40 mm. Cephalothorax 1.60 mm long, 1.40 mm wide, 0.94 mm high. Abdomen 2.80 mm long, 2.12 mm wide, 2.20 mm high. Cephalothorax nearly as wide as long, brown, with more hairs in the cephalic area than thoracic area, all margins well rounded or recurved except slightly indented median of the posterior margin. Eight eyes in two rows, strongly recurved AE row shorter (0.52 mm) than the straight PE row (0.56 mm). Eye diameter (mm): PME = PLE = 0.12, ALE = 0.10, AME = 0.08. AME–AME separation one AME diameter. AME–ALE separation one half PME diameter. PME and PME–PLE separation as long as AME. Median ocular quadrangle's anterior and posterior similar in length (0.28 mm). Clypeus height four times AME separation. Sternum yellowish brown, longer (0.99 mm) than wide (0.84 mm), partially indented opposite coxae except in tubercle-like structure opposite coxa I, labium fused to sternum apically and separated only by a thin line. Maxillae prominently longer than wide, yellow with black serrulae and yellow scopulae on the inner margins. Chelicerae vertical as in maxillae, yellow with two promarginal and no retromarginal teeth. Basal tooth of each promargin bifurcated. Legs long and slender and with thin spines, tarsi three-clawed with eight or nine and one or two teeth in the superior and inferior claws, respectively. Leg segment ratios: metatarsus I/tarsus I = 2.69, l/d of tibia I = 7.33. Tm I = 0.66. Leg formula 1423. Pedipalps yellow-brown, each single-clawed with five teeth.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.64	0.80	2.16	2.48	0.92	9.00
2	1.88	0.72	1.44	1.68	0.76	6.48
3	1.44	0.60	1.00	1.20	0.64	4.88
4	2.16	0.76	1.60	1.88	0.72	7.12

Pedicel longer than wide, narrow apically and almost bifurcated up to midlength posteriorly. Abdomen globular, grayish brown with a white longitudinal median band and with a pair of white spots subdorsally, entire abdomen clothed with brown hairs. Anal tubercle and spinnerets yellow-brown. Basal segments of both anterior and posterior areas short and robust, terminal segments small and yellow. Epigynum spherical with an ovate black cap towards posterior.

Etymology: From the provincial type locality, Nueva Ecija.

Natural history: The only specimen was collected by D-Vac suction machine from direct seeded pregerminated rice in irrigated wetlands in July.

Material examined: PHILIPPINES: *Luzon Is.*, Nueva Ecija Prov., Zaragoza, holotype female, 7 July 1987. A.T. Barrion.

Distribution: Philippines.

Theridion kambalum new species
(Fig. 266ab)

Description:

Female: Total length 1.82 mm. Cephalothorax 0.69 mm long, 0.58 mm wide, 0.48 mm high. Abdomen 1.13 mm long, 0.98 mm wide, 1.03 mm high. Cephalothorax yellow with black eye margins. Cephalic area not distinctly produced from the thoracic area, the latter broadest dorsal of coxae II–III. Eight eyes in two recurved rows, AE more recurved than PE. Eye diameter (mm): ALE = PME = 0.06, AME = PLE = 0.05. Eye separation: AME–AME = PME–PME = PME–PLE one fifth shorter than one AME diameter, AME–ALE quite close to each other, ca. one fifth AME diameter. LE contiguous. Clypeus height large, 2.6 times AME diameter. Sternum yellow with gray margins, wider than long, posterior end broadly truncate between coxae IV. Labium same color as sternum except light yellow distal border, wider than long. Maxillae yellow, longer than wide, slightly converging towards apex. Chelicerae yellow, moderately small, promargin with a bifurcated tooth. Legs relatively slender, yellow except black band in the apex of tibia IV, tibia I with two dorsal spines, tibia I l/d = 4.69, tibia I a/b = 0.38, length of longest spine of tibia I/diameter at point of insertion = 2.88. Leg formula 1423. Pedipalp yellow except pale brown tarsi, as long as combined length of patella and tibia of leg II.

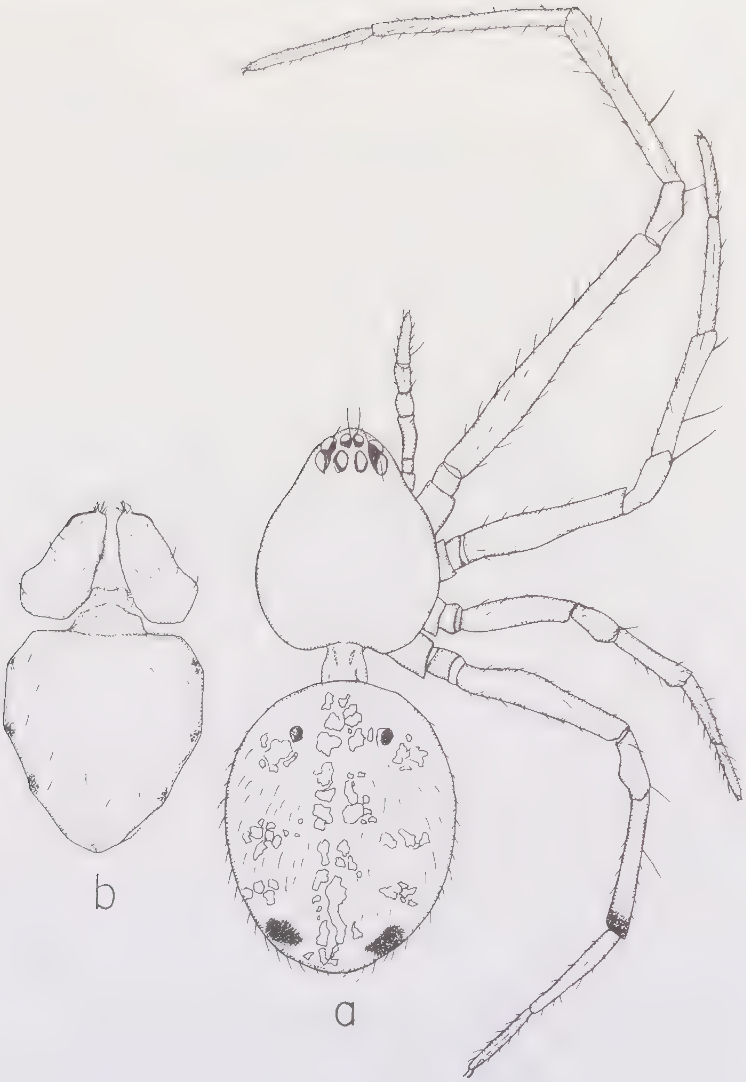


Fig. 266. Female *Theridion kambalum* n. sp., habitus (a); and sternum, labium, and maxillae (b).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.88	0.28	0.61	0.65	0.38	2.80
2	0.65	0.23	0.45	0.50	0.35	2.18
3	0.53	0.24	0.34	0.40	0.31	1.82
4	0.70	0.25	0.60	0.53	0.39	2.47
Pedipalp	0.23	0.10	0.11	–	0.24	0.68

Abdomen globular, yellow with two pairs of black subglobular dorsal spots, anterior pair very small and the posterior pair five to six times broader than the anterior pair. Laterals and venter yellow with a black ring in the spinnerets and lateral sides of epigynum. A small scape-like structure in the anterior margin of epigynum, spermathecal sacs twin-like on top of each other on one side, fertilization duct very short.

Etymology: Derived from twin-like ('kambal' in Tagalog) nature of the spermathecae + um.

Natural history: A single female was collected from a Malaise trap set in the middle of a weedy ricefield in October.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Kalilangan Vill. holotype female, 8 October 1985, A.T. Barrion.

Distribution: Philippines.

Theridion ischagosum new species
(Fig. 267a–f)

Description:

Female: Total length 1.93 mm. Cephalothorax 0.75 mm long, 0.58 mm wide, 0.50 mm high. Abdomen 1.18 mm long, 0.90 mm wide, 0.60 mm high. Cephalothorax brownish gray, darker gray-brown posterior of PE, cephalic area more hairy and dark-colored than thoracic area. Eight eyes all clear and homogeneous, in two rows, AE strongly recurved and PE straight. Eye diameter

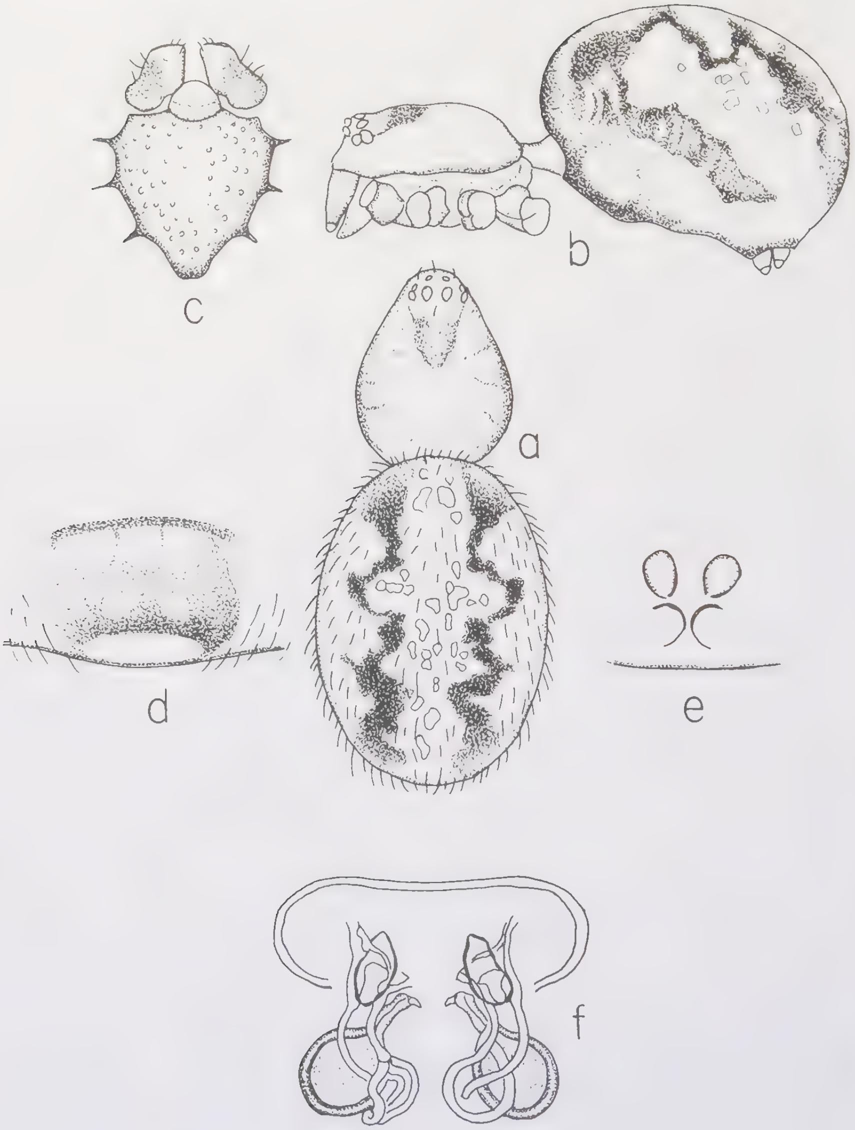


Fig. 267. Female *Theridion ischagosum* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); and uncleared dorsal (d) view and ventral views of uncleared (e) and cleared (f) epigynum.

(mm) uniform: AME = PME = ALE = PLE = 0.05. Eye separation: AME–AME and AME–ALE two thirds AME diameter, PME–PME as long as one AME diameter, PME = PLE as long as AME–AME. Clypeus height large, twice AME diameter. Sternum pitted moderately and dark brown, longer than wide, posterior end bluntly rounded and extended between coxae IV, lateral margins between coxae with narrow extensions, apical end as in other *Theridion*. Labium wider than long, brown except yellow distal border. Maxillae yellow-brown apices partially converging and bearing scopulae. Chelicerae small, vertical, yellow with gray patches, promargin with a bifurcated tooth. Legs moderately slender, yellow except black ring band in the apices of tibiae I–IV, and apical one half of patella II, tibia I d/l = 0.11, metatarsus I/tarsus I = 1.06, tibia II as long as metatarsi I and II. Leg formula 1243. Pedipalp brown with black to gray patches, except in tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.03	0.28	0.88	0.93	0.43	3.55
2	0.95	0.28	0.93	0.93	0.45	3.54
3	0.85	0.25	0.65	0.63	0.35	2.73
4	1.00	0.30	0.80	0.75	0.40	3.25
Pedipalp	0.20	0.13	0.11	–	0.23	0.67

Abdomen oblong, yellowish white with a pair of black submarginal longitudinal bands, apex of band extended laterally but not reaching spinnerets. Orifice of epigynum transverse, elongate, touching epigastric furrow, and with three white spots anteriorly and a pair of ovoid white spots between the orifice and the three white spots. Cleared epigynum with a pair of circular orifices on each side of the elongately transverse orifice, spermathecae globular and diverging apically, fertilization tube moderately long.

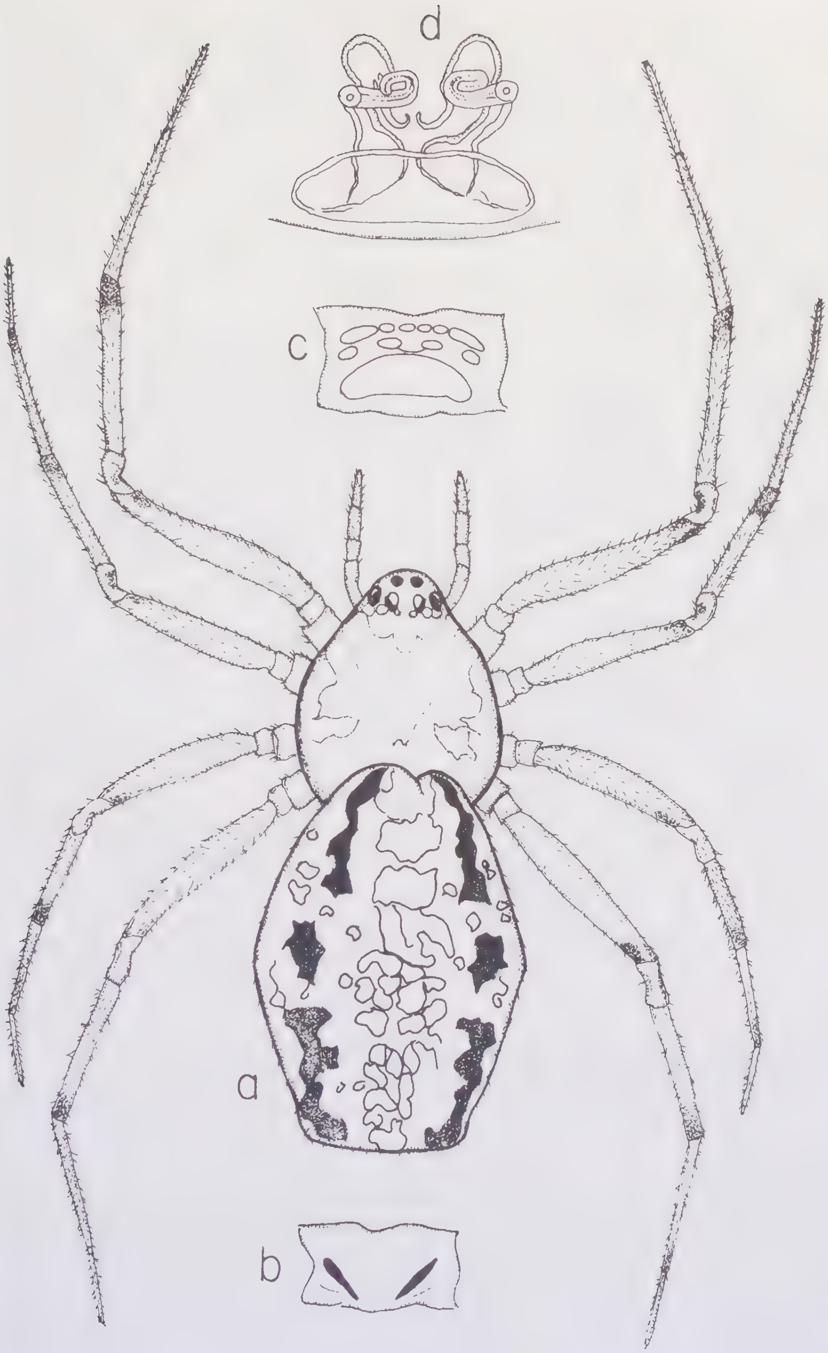


Fig. 268. Female *Theridion antheae* n. sp. (a); and dorsal view of uncleared (b) and cleared (c) and ventral view of cleared epigynum (d).

Etymology: Derived from the host weed, *Ischaemum rugosum.*
Natural history: One female specimen was collected in October from *I. rugosum.*
Material examined: PHILIPPINES: *Luzon Is*: Laguna Prov., Los Baños, IRRI Farm, holotype female, 14 October 1979, A.T. Barrion.
Distribution: Philippines.

Theridion antheae new species
(Fig. 268a–d)

Description:
Female: Total length 2.02 mm. Cephalothorax 0.78 mm long, 0.60 mm wide, 0.50 mm high. Abdomen 1.24 mm long, 0.88 mm wide, 0.60 mm high. Cephalothorax more than one half length of abdomen, reddish brown with dark markings, black eye margins, gray band behind PLE and tapering to foveal area, and grayish black

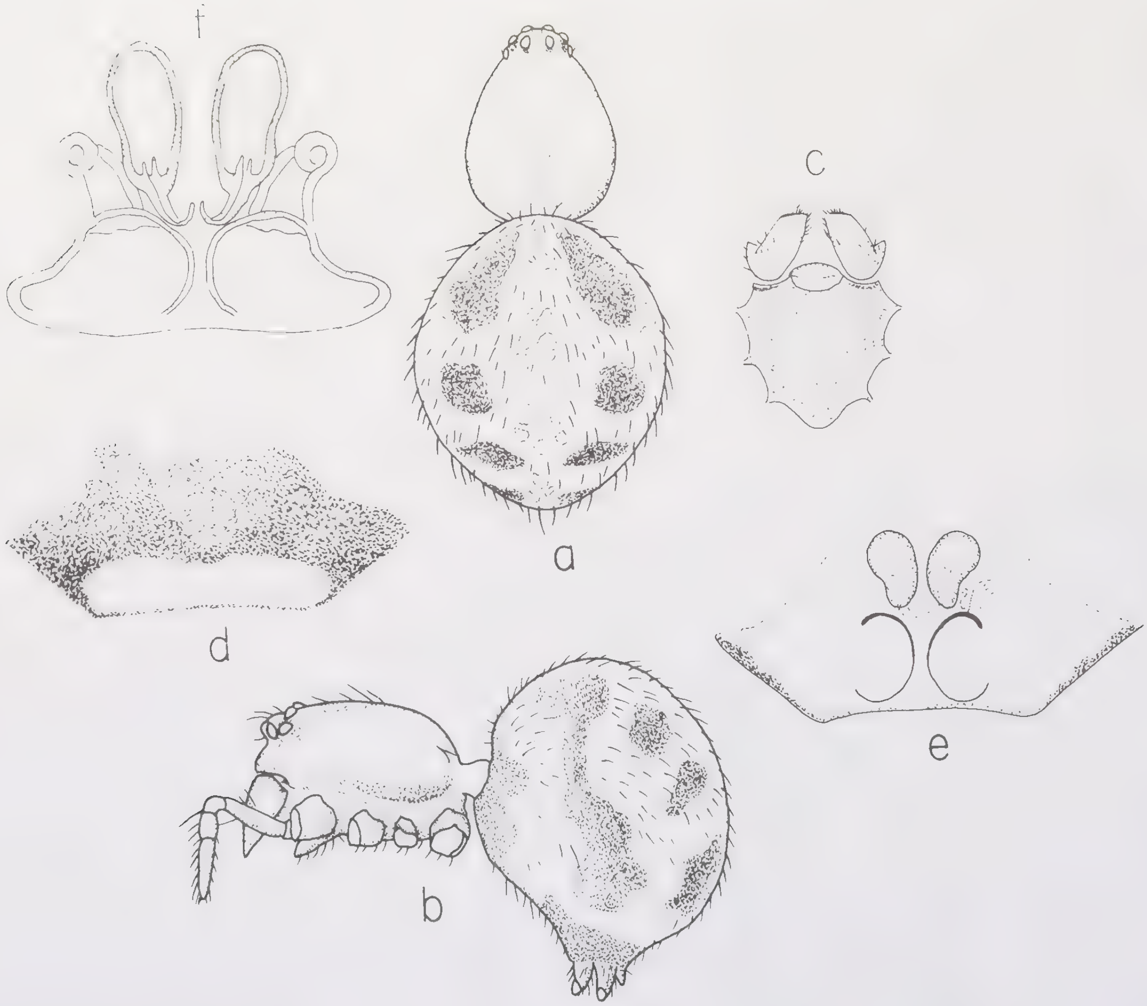


Fig. 269. Female *Theridion otsospotum* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); and dorsal (d) view and ventral view of uncleared (e) and cleared (f) epigynum.

marginally. Eight eyes in two rows, AE row recurved and slightly shorter than the straight to slightly procurved PE row. Eye diameter (mm): PME = PLE = ALE = 0.05, AME = 0.04. Eye separation (mm): AME–AME = 0.04, AME–ALE = 0.03, PME–PME = PME–PLE = 0.05. MOQ square to very slightly wider behind than in front. Clypeus height 2.5 times AME diameter. Sternum yellow-gray, except yellow median and black margins, heart-shaped, longer than wide, blunt posteriorly. Labium gray-brown. Maxillae converging, with whitish yellow scopulae, gray on outer one half and yellow on inner half. Chelicerae small and weak. Legs yellow with black bands on prolaterals of trochanters I and IV, prolateral base of femur I, and apices of each segment except tarsi. All tibiae with an anterodorsal and a dorsomedian spine. Tibia I l/d = 9.83. Metatarsus I/tarsus I = 1.73. Leg formula 1423. Pedipalp grayish brown, with yellow midfemur, dorsum of patella and tibia, and apical one half of single-clawed tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.84	0.28	0.78	0.71	0.41	3.02
2	0.71	0.28	0.59	0.51	0.34	2.43
3	0.56	0.20	0.40	0.43	0.34	1.93
4	0.83	0.28	0.68	0.53	0.34	2.66
Pedipalp	0.21	0.09	0.13	–	0.25	0.68

Abdomen oblong, yellow with two broad longitudinal black bands, interrupted medially, laterals with a thin black longitudinal band ventrolaterally; venter black anterior to epigastric furrow, posterior one third, and around yellow spinnerets. Uncleared epigynum dorsally with a transverse subovate orifice lined anteriorly with transparent transversely oblong spots. Spermathecae ovoid, diverging apically, opening as large as spermathecae, and spermathecal arms anterior to the openings, close to each other.

Etymology: Named after the collector Dr Anthea Cook.

Natural history: Associated with nymphs of *Nephotettix* spp. when it was D-Vac collected in April.
Material examined: PHILIPPINES: *Luzon Is*: Laguna Prov., Liliw, Tuybaana Vill., holotype male, 26 April 1980, A. Cook.
Distribution: Philippines.

Theridion otsospotum new species
(Fig. 269a–f)

Description:
Female: Total length 1.80 mm. Cephalothorax 0.70 mm long, 0.53 mm wide, 0.50 mm high. Abdomen 1.10 mm long, 0.80 mm wide, 0.85 mm high. Cephalothorax yellow, with gray band posterior to PE and lateral margins, cephalic area not elevated but rounded along clypeal margin. Eight eyes in two rows, homogeneous, and clear, AE strongly recurved and PE row straight. Eye diameter (mm): AME = ALE = PME = 0.05, PLE = 0.06. Eye separation: AME–AME = AME–ALE = PME–PLE as long as two thirds AME diameter, PME–PME as long as one AME diameter. Clypeus height large, 1.6 times AME diameter. Sternum heart-shaped, brownish gray with scattered pits, as long as wide, posterior end strongly rounded and moderately produced between coxae IV. Labium wider than long, same color as sternum except light yellow distal end. Maxillae slanted towards each other, gray-brown with yellow retromargin and a yellow circular spot basally. Chelicerae small, yellow with gray patches, promargin with a bifurcated tooth. Legs short, yellow with gray bands on apices of segments except tarsi, tibia I d/l = 0.13, metatarsus I/tarsus I = 1.57. Leg formula 1423. Pedipalp as long as metatarsus I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.78	0.25	0.63	0.60	0.38	2.64
2	0.59	0.20	0.40	0.45	0.33	1.97
3	0.48	0.18	0.33	0.35	0.25	1.59
4	0.70	0.25	0.55	0.50	0.31	2.31
Pedipalp	0.18	0.10	0.09	–	0.23	0.60

Abdomen globular, yellow, with four pairs of black spots submarginally, apical pair the largest and extended diagonally towards the laterals. Margins of spinnerets entirely black. Colulus and paired setae absent. Epigynum with a strongly transverse oblong orifice, spermathecal sac pear-shaped, and fertilization duct with a highly visible duct inside sac.
Etymology: Derived from Tagalog–Spanish word for eight ('otso') spots present in the dorsum of the abdomen.
Natural history: Isolated from D-Vac collections taken from lowland rice in April.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna, Liliw, Tuybaana Vill., holotype female, 14 April 1980, T.J. Perfect.
Distribution: Philippines.

Theridion punongpalayum new species
(Fig. 270a–f)

Description:
Female: Total length 2.01 mm. Cephalothorax 0.78 mm long, 0.83 mm wide, 0.53 mm high. Abdomen 1.23 mm long, 0.98 wide, 1.00 mm high. Cephalothorax yellow-brown except black eye margins. Cephalic area slightly higher than thoracic area. Eight eyes in two rows, AE strongly recurved, and PE row straight to partially recurved. Eye diameter similar, all 0.05 mm. Eye separation: AME–AME as long as PME–PME and PME–PLE ca. two thirds AME diameter, AME–ALE 0.02 AME diameter. LE contiguous. Clypeus height large, a little more than twice AME diameter. Sternum same color as cephalothorax, labium, and maxillae, slightly longer than wide, heart-shaped, and hirsute, posterior end broadly rounded between coxae IV. Labium wider than long, distal margins light yellow. Maxillae longer than wide, apices moderately converging towards each other, serrula reddish brown. Chelicerae weak, yellow, longer than wide, small and stout basally, promargin with a bifurcated tooth. Legs yellow-brown with a black patch in the apices of tibiae, tibia I d/l = 0.13, metatarsus I/tarsus I = 0.97, Tm I = 0.32. Leg formula 1423. Pedipalp yellow, total length nearly as long as tibia IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.95	0.24	0.75	0.73	0.40	3.07
2	0.75	0.25	0.54	0.53	0.35	2.42
3	0.55	0.21	0.38	0.40	0.33	1.87
4	0.85	0.23	0.68	0.56	0.35	2.67
Pedipalp	0.23	0.13	0.10	–	0.20	0.66

Abdomen subglobular dorsally, yellow with four pairs of black spots, apical pair long and longitudinal, rest of pairs subovate to globular. Venter yellow with gray bands on each lateral side of epigynum and anterior to spinnerets. Epigynum with a transverse orifice, apical margin slightly wavy, fertilization duct relatively short, spermathecal sacs of unequal sizes, right side more globular than the left one.
Etymology: A Tagalog word for the spider's habitat, base ('puno') of the rice plant ('palay').
Natural history: Three females collected by aspirator in between rice tillers at the base of the plant in October.
Material examined: PHILIPPINES: *Luzon Is.*, Nueva Ecija Prov., Cabanatuan, Sto. Domingo Vill., holotype female, 22 October 1979, A.T. Barrion; female paratypes, 23 October 1979, same locality as holotype, A.T. Barrion.
Distribution: Philippines.

Theridion lumabani new species
(Fig. 271e–g)

Description:
Female: Total length 1.84 mm long. Cephalothorax 0.70 mm long, 0.70 mm wide, 0.50 mm high. Abdomen

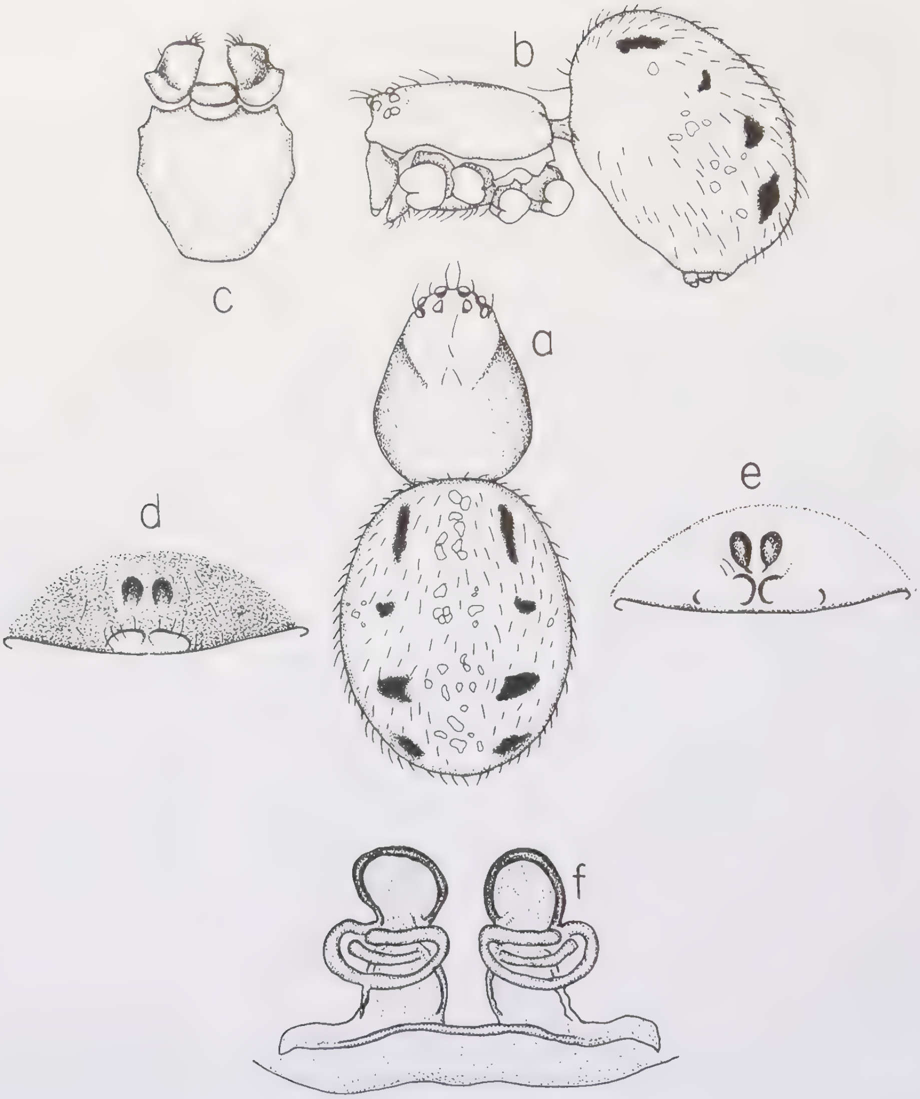


Fig. 270. Female *Theridion punongpalayum* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, maxillae (c); and uncleared dorsal (d) view and ventral view of uncleared (e) and cleared (f) epigynum.

1.14 mm long, 0.80 wide, 0.80 mm high. Cephalothorax convex, yellow with a fine gray to black borderline, black eye surrounds, and pearly white eyes. Cephalic region narrower than thorax, with a strongly cleft posterior end for the pedicel. Fovea transverse and moderately deep. Eight eyes in two recurved rows, heterogeneous, with black AME, AE shorter than PE (0.26 : 0.28 mm). Eye diameter (mm): PME = PLE = ALE = 0.06, AME = 0.04. AME–AME separation 0.50 AME diameter, AME–ALE similar to AME separation, ALE–PLE contiguous, PME separation one half AME diameter, PME–PLE one third AME diameter. Clypeus height three times diameter. Sternum yellow with grayish tinge and light black margins, heart-shaped and convex, with extensions separating coxae, midanterior end deeply concave below labium, posterior end straight and as wide as one coxal diameter. Labium concolorous with the sternum and borne on the apex of sternum. Maxillae converging with slanted outer sides and an elliptical brown spot at the base. Chelicerae yellow with light brown fang, vertical and as long as the combined length of tarsus and tibia. Legs yellow with black bands on distal ends of femora, patella, and tibia; tibia I with two dorsal setae, l/d = 6.33. Metatarsus I/tarsus I = 1.5. Leg formula 1423. Palp with a claw and a black apical band on tibia.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.76	0.25	0.60	0.60	0.40	2.61
2	0.58	0.22	0.46	0.46	0.34	2.06
3	0.48	0.20	0.33	0.30	0.30	1.61
4	0.72	0.26	0.58	0.50	0.36	2.42
Pedipalp	0.22	0.09	0.10	–	0.24	0.65

Abdomen subglobular, white, and with three or four pairs of black subdorsal spots, laterals black, venter yellow below epigynum and black above and around spinnerets. Spinnerets brown, anterior pairs twice longer

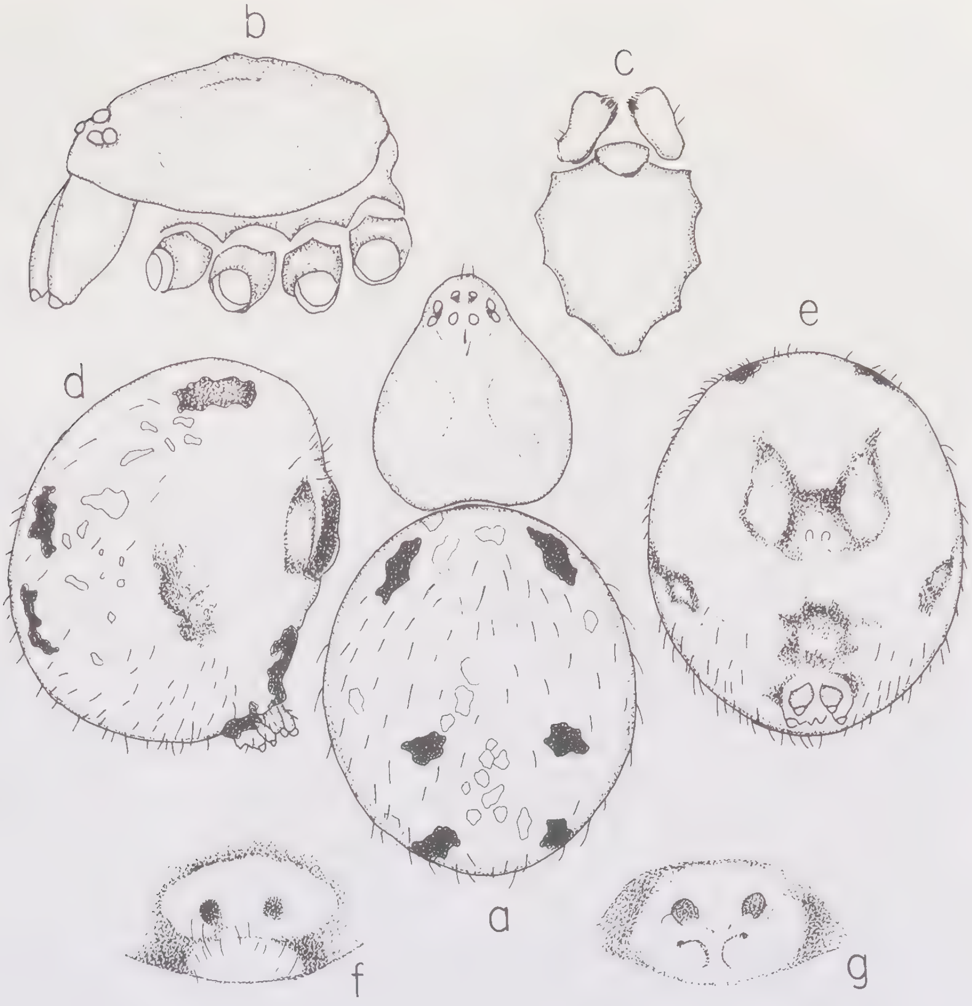


Fig. 271. Female *Theridion lumabani* n. sp. (a); side view of carapace (b); sternum, labium, and maxillae (c); lateral (d) and ventral (e) views of abdomen; and uncleared dorsal (f) and ventral (g) views of epigynum.

than the posterior. Epigynum transversely C-shaped, right spermatheca less rounded than the left.

Variation: The paratype female has only six black dorsal spots and bigger body size, total length 2.72 mm long, carapace 0.92 mm long, same width of 0.70 mm, abdomen 1.8 mm long, 1.24 mm wide, and 1.30 mm high, and much longer legs.

Etymology: Named after Mr Marcelino Lumaban.

Natural history: These spiders were found underneath the curled leaves of soybean feeding on tetranychid mites, *Tetranychus* sp. Two females were collected in April.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo Prov., Oton, Cordova Vill., holotype female, 18 April 1979, M.D. Lumaban; Oton, San Miguel Vill., one paratype female, same data as holotype, one female paratype, same locality as holotype, 17 January 1978, A.T. Barrion.

Distribution: Philippines.

Genus *Anelosimus* Simon

Anelosimus Simon, 1891. Ann. Soc. Entomol. France 60: 11

Anelosimus Simon is a moderately small genus of small to medium-sized theridiids (1–6 mm long). It comprises 30 species with almost 60% of the known species occuring in the Neotropical, five each in the Ethiopian and Palaearctic, and one each in the Nearctic and Oriental regions. One species, *A. pulchellus* (Walckenaer), has both Palaearctic and Ethiopian distribution.

Members of the genus closely resemble *Theridion*; however, *Anelosimus* bears the remnants of the colulus – the two fine bristles adjacent to the base of the anterior spinnerets; chelicerae with a few teeth on the promargin and a series of denticles in the retromargin; ovoid abdomen longer than wide with a dorsal dark band; female epigynum usually with coiled ducts; and male pedipalp often with a circular embolus.

The genus is recorded for the first time in the Philippines.

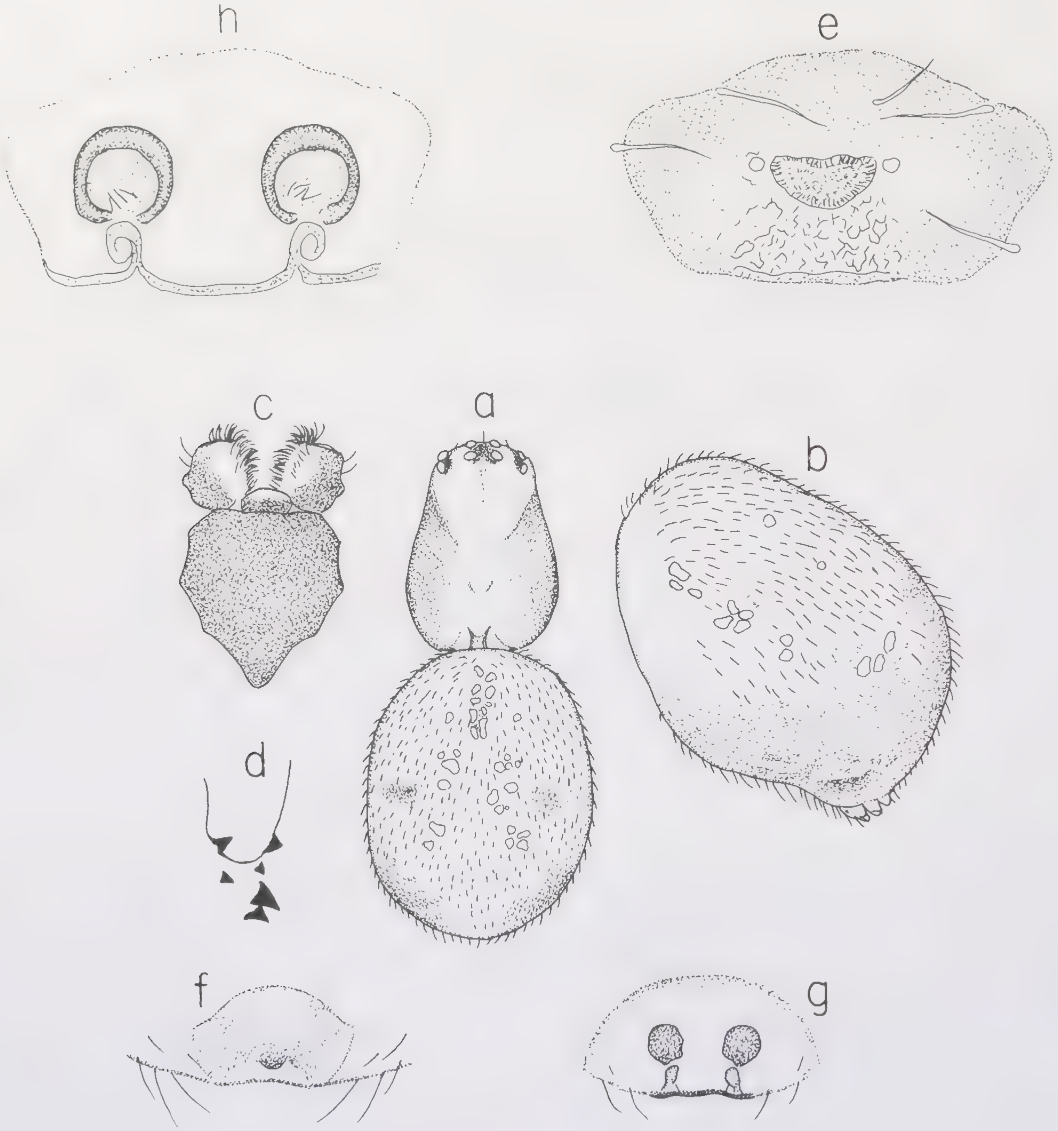


Fig. 272. Female *Anelosimus salaensis* n. sp. (a); lateral view of abdomen (b); sternum, labium, and maxillae (c); cheliceral teeth (d); epigynum with plug (e); and dorsal (f) and ventral (g) views of uncleared and ventral view of cleared epigynum (h).

Anelosimus salaensis new species

(Fig. 272a–h)

Description:

Female: Total length 2.93 mm. Cephalothorax 1.10 mm long, 0.85 mm wide, 0.68 mm high. Abdomen 1.83 mm long, 1.25 mm wide, 1.33 mm high. Cephalothorax yellow-brown, becoming yellow subposteromedially and at median base of cephalic area, eye margin black, and cephalic area with moderately long hairs. Eight eyes, clear and homogeneous, in two recurved rows, AE slightly shorter than PE. Eye diameter (mm): PME = 0.10, AME = PLE = 0.07, ALE = 0.05. Eye separation: AME–AME roughly one AME diameter, AME–ALE twice ALE or 0.7 AME diameter, PME–PME one half PME diameter, PME–PLE 1.5 times PME or twice AME diameter. Clypeus height relatively large, ca. one third wider than one AME diameter. Sternum black and moderately hirsute, slightly wider than long, anterior margin straight, posterior end tapering to narrow blunt point between coxae IV. Labium triangular, apically yellow, rest same color as maxillae and sternum. Maxillae short but broad, inner lateral border yellow with scopulae. Chelicerae yellowish brown, vertical, small, shorter than transverse length of clypeus. Promargin with four teeth, subbasal tooth the largest and partially projected downward. Retromargin with two diverging teeth. Legs hirsute, same color as cephalothorax, patellae with long apical spine, femur I with a long subapical prolateral spine, tibia I with a submedian prolateral spine. Leg formula 1423. Pedipalp yellowish along patella and femur, brownish in tibia and tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.75	0.33	0.80	0.53	0.40	2.81
2	0.68	0.28	0.50	0.46	0.38	2.30
3	0.55	0.25	0.38	0.35	0.29	1.82
4	0.80	0.30	0.63	0.53	0.33	2.59
Pedipalp	0.30	0.15	0.21	–	0.30	0.96

Abdomen subglobular, yellow in the apical one half and grayish black in the posterior half, with a pair of transverse ovate yellow spots subposteriorly, two pairs of globular sigilla present dorsally. Spinnerets not visible dorsally. Epigynum simple, median part with a subtriangular plug plate in uncleared form, anterior margin of orifice tongue-like, spermathecae spherical, with coiled spermathecal opening posteriorly leading to indentions in posterior epigynal margin.

Etymology: After the type locality.

Natural history: The holotype female was collected by D-Vac suction machine from a 55-day-old lowland ricefield in August.

Material examined: PHILIPPINES: *Mindanao Is.*, Zamboanga del Sur Prov., Molave, Sala Reservoir Vill., holotype female, 10 August 1979, A.T. Barrion.

Distribution: Philippines.

Anelosimus nigrobaricus new species
(Fig. 273a–f)

Description:

Female: Total length 2.00 mm. Cephalothorax 0.80 mm, 0.70 mm wide, 0.45 mm high. Abdomen 1.20 mm long, 0.88 mm wide, 0.63 mm high. Cephalothorax yellow except black lateral margin, PE area, and posterior of PE. Cephalic lower than the elevated midthoracic area. Eight eyes in two rows, AE strongly recurved and without black margins, PE slightly recurved with the entire eye area blackened. Eye diameter (mm): PME = 0.09, PLE = 0.08, ALE = 0.06, AME = 0.05. Eye separation: AME–AME 0.7 AME diameter, AME–ALE = PME–PME as long as AME separation, PME–PLE less than one half AME diameter. Clypeus height very large, almost three times AME diameter. Sternum yellow-brown, moderately hirsute, longer than wide, posterior end tapered posteriorly and extended between coxae IV. Labium same color as sternum, narrow, thin, and much wider than long. Maxillae yellowish brown, longer than wide with converging apices. Chelicerae small, yellow basally and brownish apically, diverging towards apex, promargin with three equally long teeth, and a large rounded protrusion near base of fang. Legs uniformly brown-yellow, except black stripe in venter of patella and apices of leg segments, without strong spines. Tarsi without black stripe apically. Tibia I d/l = 0.19. Metatarsus I/tarsus I = 1.51. Leg formula 4123. Pedipalp brown except yellow femur.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.90	0.35	0.88	0.80	0.53	3.46
2	0.75	0.30	0.60	0.53	0.40	2.58
3	0.70	0.28	0.50	0.50	0.40	2.38
4	1.10	0.43	0.98	0.75	0.43	3.69
Pedipalp	0.23	0.12	0.12	–	0.23	0.70

Abdomen subglobular, black, with yellow patches and subposterior oblongate spots, posterior end with a large black spot. Laterals more blackish towards the anterior and yellow towards the spinnerets. Epigynum with a median longitudinal slit-like bar and thick coiled spermathecal ducts.

Etymology: Named after the blackened ('nigro' in Tagalog) body and bar in epigynum.

Natural history: Three females (two with abdomen and one without abdomen) were isolated from a pitfall trap set in the upland rice planted after clearing a secondary dipterocarp forest in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 19 December 1984, M. Perez and B. Garcia; paratype two females, same data as holotype (all females not in good condition).

Distribution: Philippines.

Genus *Dipoena* Thorell

Dipoena Thorell, 1869. Nova Acta Reg. Soc. Sci. Upsaliensis, Ser. 3 7: 91.

The genus *Dipoena* Thorell is a large group of small to medium-sized (1.5–5.0 mm long) comb-footed spiders, represented by approximately 105 species, widely distributed in the Neotropical (66 species), Palaearctic (43), Nearctic (30), Australian (21), Oriental (17) and Ethiopian (nine) regions of the world. Two species, *D. braccata* (C.L. Koch) and *D. melanogaster* (C.L. Koch) occur in both Europe and North Africa.

Members of the genus are characterized by the subovoid carapace; eye region slightly projecting; very high and concave clypeus; subglobose abdomen; sternum broadly produced between coxae IV; leg I longer than IV; female epigynum with a distinct opening, bears a pair of spherical spermathecae and ducts with very minimal coils; male pedipalp usually bears a large median apophysis, embolus long and forming a circle, conductor with small projections, and an accessory apophysis usually attached to embolus.

Dipoena is recorded for the first time in the Philippines.

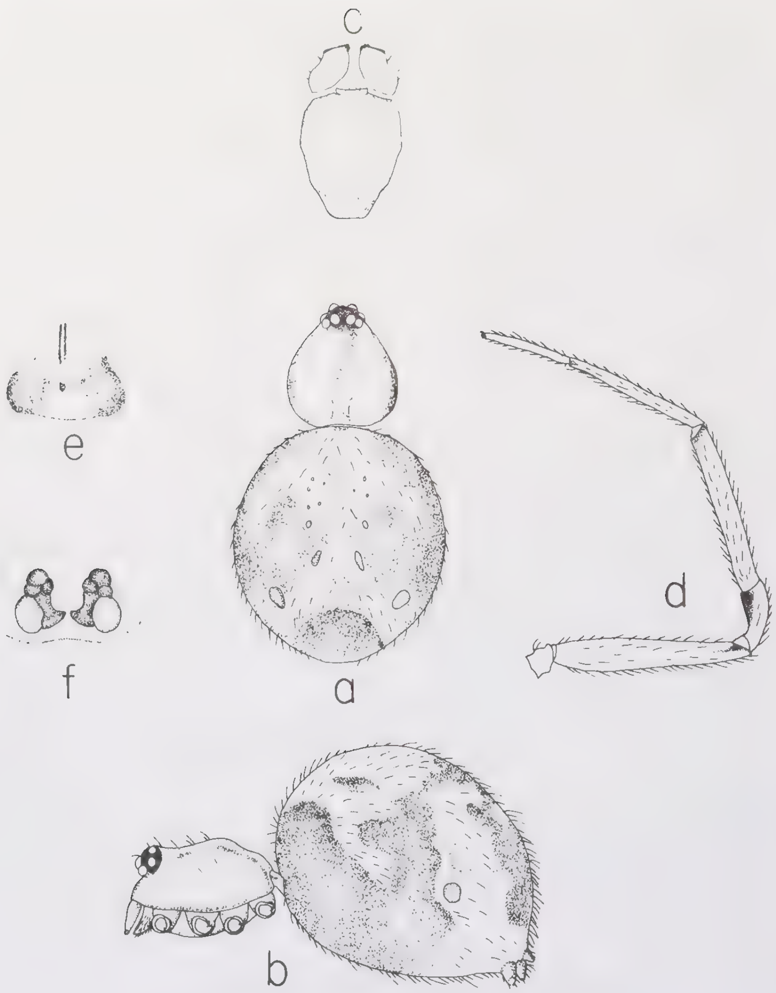


Fig. 273. Female *Anelosimus nigrobaricus* n. sp., dorsal (a) and lateral (b) habitus; sternum and maxillae (c); leg I (d); and dorsal (e) and ventral (f) views of epigynum.

Dipoena ruedai new species

(Fig. 274–j)

Description:

Male: Total length 2.24 mm. Cephalothorax 0.80 mm long, 0.80 mm wide, 1.12 mm high. Abdomen 1.44 mm long, 1.08 mm wide, 1.12 mm high. Cephalothorax yellowish brown, barrel-shaped, with a yellow basal one third and transversely concave groove with nine branches in the flat, globular dorsum. Eight eyes in two rows, strongly recurved AE row shorter (0.40 mm) than the straight PE row (0.42 mm). Eye diameter (mm): AME = PLE = 0.08, ALE = 0.07, PME = 0.06. AME–AME separation one AME diameter. AME–ALE separation one half AME diameter. PME–PME separation one ALE diameter. LE contiguous. PME–PLE separation 1.1 PLE diameter. Median ocular quadrangle wider in front (0.24 mm) than behind (0.19 mm). Clypeus very high, 8.3 times AME diameter. Sternum yellow, as long as wide, with three sparse rows of hairs near margins, lateral margins straight, posterior tapers to a truncated end, median area partially raised. Labium contiguous to sternum. Maxillae yellow, vertically diagonal, and converging towards each other. Chelicerae vertical, small with basal ends sharply pointed. Legs yellow, all longer than length of abdomen, leg segment ratios: tibia l/d I = 5.33, II = 4.66, III = 3.69, IV = 7.5, metatarsus I/tarsus I = 2.11. Tm I = 0.89. Tarsi three-clawed, with a tooth in each superior claw, inferior clawless. Leg formula 4123. Pedipalp yellow, except reddish brown cymbium and light brown tibia. Tegulum a broad transverse rectangular plate, ejaculatory ducts triple-coiled, embolus short, tibia cup- or plate-like in ventral view.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.72	0.32	0.48	0.38	0.18	2.08
2	0.58	0.22	0.42	0.33	0.22	1.77
3	0.44	0.20	0.34	0.24	0.24	1.46
4	0.65	0.25	0.60	0.40	0.30	2.20

Abdomen globular, yellow, anterodorsal highly sclerotized, brown (scutum), sparsely hirsute with brown hair bases, dorsum with two longitudinal rows of five

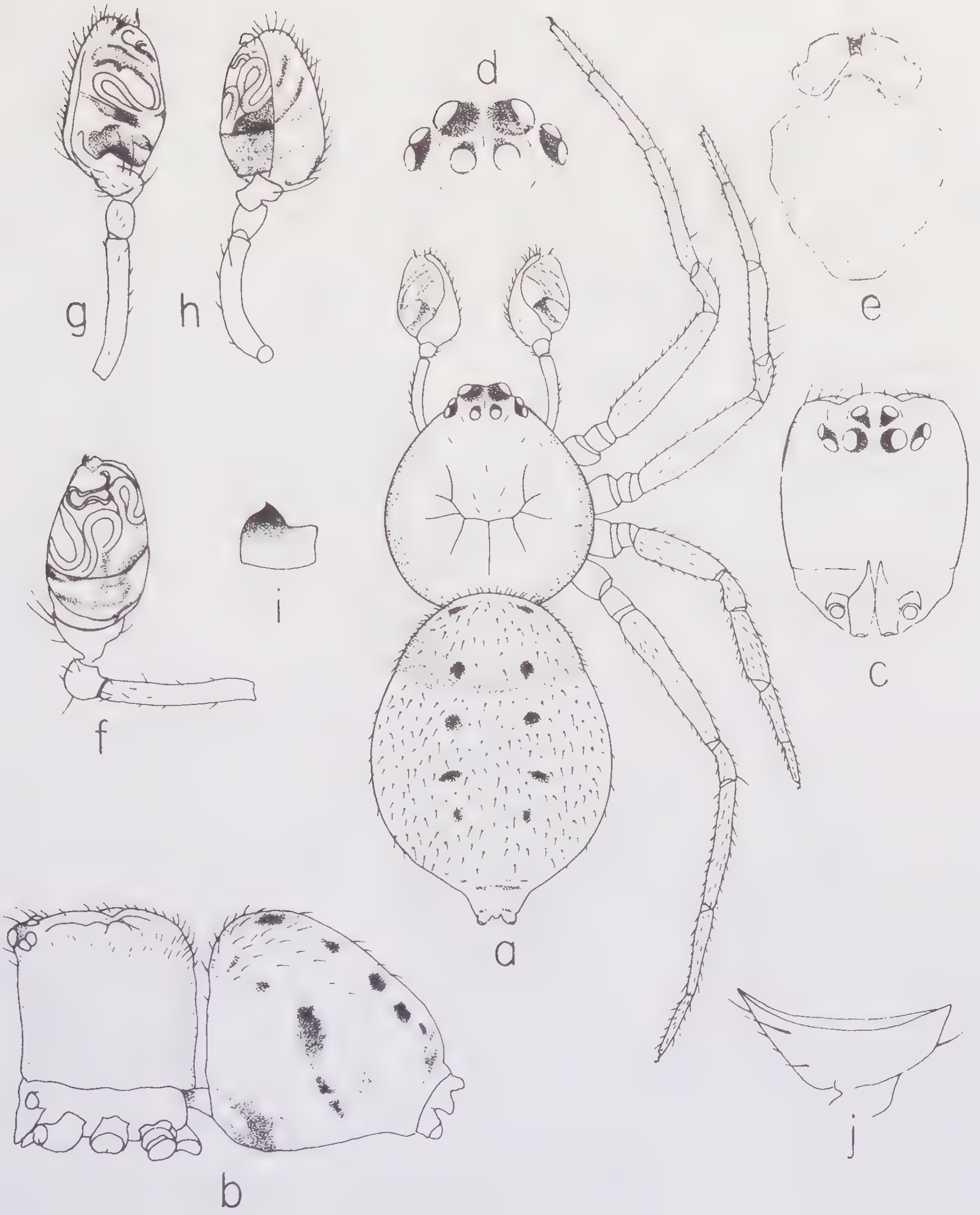


Fig. 274. Male *Dipoena ruedai* n. sp., dorsal (a) and lateral (b) habitus; front view of carapace (c); eye pattern (d); sternum, labium, maxillae (e); ventral (f), ventrolateral (g), and retrolateral (h) views of pedipalp; terminal apophysis (i); and tibia of pedipalp (j).

gray spots (ten-spotted) and four brown spherical sigilla, laterals each with three or four gray spots, venter with a wasp head-like band anteriorly and three transverse rows of ten yellow-brown spots (4-2-4) posterior to the epigastric furrow, posterior end of venter with a broad transverse yellow band anterior to the yellow spinnerets. Anterior spinnerets closed to each other basally and separated by a V-shaped space anteriorly. Posterior spinnerets smaller than anterior ones and widely separated from each, closer to the anterior pair than to each other. Anal tubercle brown basally and yellow apically, with a yellow-brown band and two small brown spots dorsad of it.

Etymology: The species was named after Dr L. Rueda.
Variation: Body length ranges 2.08–2.24 mm. Dorsal spots vary from five to seven pairs, laterals from three to 11 spots, and zero to ten ventral spots.
Natural history: All specimens were collected from a water pan trap set under a kerosene powered light trap from December to February.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 12 December 1984, paratype two females, 24 January 1985; and one female, 6 February 1985, A.T. Barrion.
Distribution: Philippines.

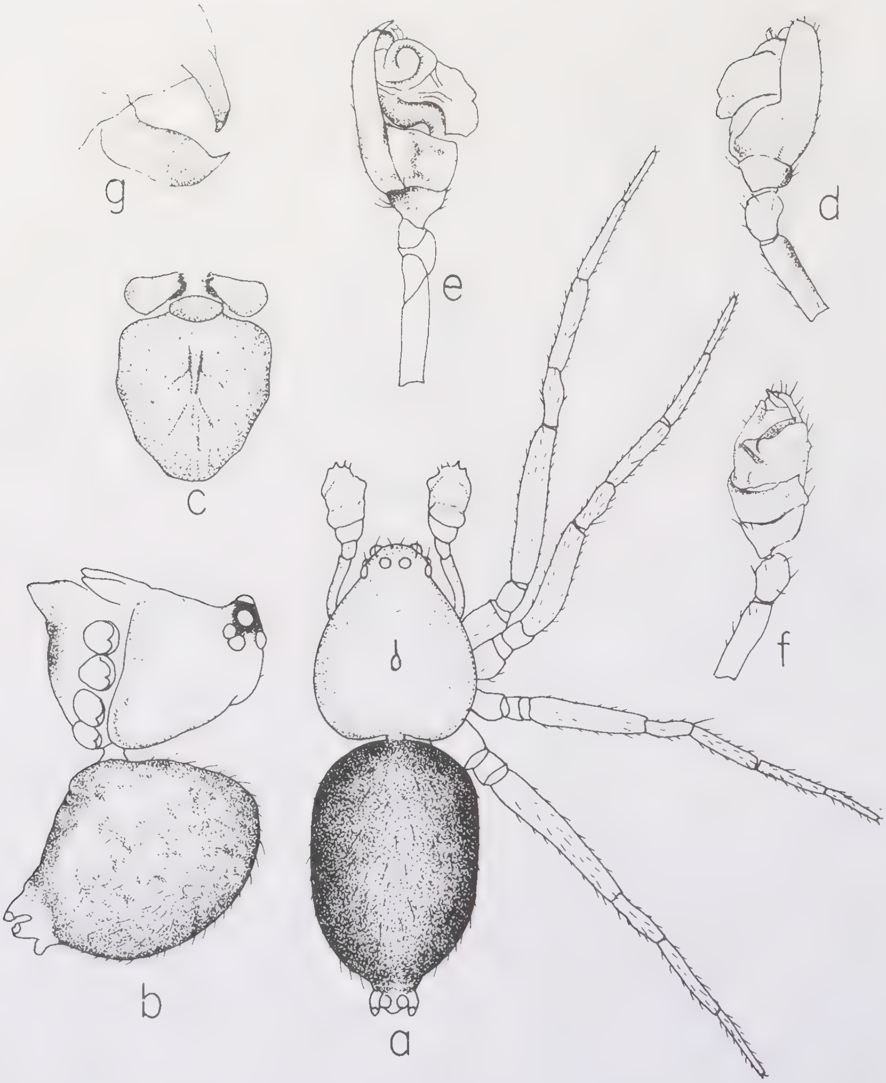


Fig. 275. Male *Dipoena tuldokguhitanea* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); retrolateral (d), ventrolateral (e), and ventral (f) views of pedipalp; and terminal apophysis (g).

Dipoena tuldokguhitanea new species
(Fig. 275a–g)

Description:
Male: Total length 2.16 mm. Carapace 0.88 mm long, 0.75 mm wide, 1.00 mm high. Abdomen 1.28 mm long, 0.82 mm wide, 0.90 mm high. Cephalothorax reddish brown, except yellowish gray base, dorsal area much narrower than base, thoracic area with a club mark, anterior one half elevated and rather projected forward, diagonally sloping thereafter, ocular area blackish brown, clypeus dark brown with a sternum-like band. Eight eyes in two rows, AE row strongly recurved but shorter (0.38 mm) than the ligthly recurved PE row (0.40 mm). Eye diameter (mm): AME = 0.13, PLE = 0.09, ALE = PME = 0.08. AME–AME less than one AME diameter. AME–ALE separation one fourth ALE diameter. PME–PME separation one half PME diameter. PME–PLE separation one PME diameter. Median ocular quadrangle much wider in the anterior (0.30 mm) than the posterior (0.20 mm). Clypeus height 3.4 times AME diameter. Sternum dirty brown, with minute yellow dots, a median longitudinal line with six branches directed between coxae, apical end deeply concave, and contiguous with the labium. Maxillae yellow-tinged dirty brown, broadly rounded basally, tapering anteriorly, triangular-like, and diagonally projected toward each other. Chelicerae yellow, vertical, and feeble. Legs yellow, except gray tinges in venter of femora and apices of coxae, patellae, tibiae, and metatarsi, leg IV with apical one half of femur and tibia gray. Leg segment ratios: l/d of tibiae I = 4.16, II = 4.40, III = 4, IV = 5.20. Metatarsus I/tarsus I = 1.31. Tm I = 0.66, metatarsus I 1.3 times longer than tarsus, tarsi three-clawed with one tooth per superior claw, inferior clawless. Leg formula 1423. Pedipalps with a dark brown cymbium, cup-like tibia black to gray, patella and femur tinged gray.

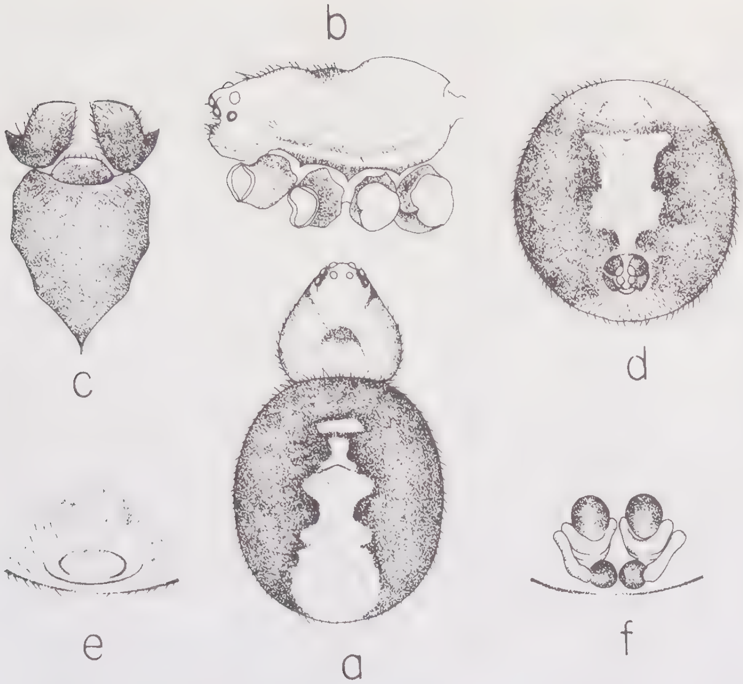


Fig. 276. Female *Latrodectus mactans* (Fabricius) (a); side view of carapace (b); sternum, labium, and maxillae (c); abdominal venter (d); and dorsal (e) and ventral (f) views of epigynum.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.70	0.28	0.50	0.42	0.32	2.22
2	0.62	0.25	0.44	0.42	0.34	2.07
3	0.55	0.24	0.40	0.38	0.33	1.90
4	0.64	0.28	0.52	0.40	0.36	2.20

Abdomen ovoid, uniformly black, and clothed with sparse white hairs, venter dark brown. Spinnerets yellow, mottled gray, anterior pair close together basally and larger than the small, well-separated posterior pair.

Etymology: *Tuldokguhitanea* is a combination of the characters typified by the sternum: in Tagalog 'tuldok' means dots and 'guhit' means lines.

Variation: Body length ranged 1.9–2.16 mm. The paratype males had a steeper posterior cephalothorax, more hirsute abdomen, and Tm I = 0.65.

Natural history: *Dipoena tuldokguhitanea* is a rare species. So far, two specimens have been collected by D-Vac suction machine in August to September from slash-and-burn dryland rice.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 22 August 1984, A.T. Barrion; paratype one male, same locality data as holotype, 5 September 1984, A.T. Barrion.

Distribution: Philippines.

Genus *Latrodectus* Walckenaer

Latrodectus Walckenear, 1805. Tabl. Aran.: 81.

Latrodectus Walckenaer is the largest member of the family Theridiidae in terms of size and comprises about 15 species widespread in all regions of the world. The genus has a unique feature of well-separated lateral eyes, the distance between them being at least one eye diameter; retromargin bears no tooth; sternum pointed behind and narrowly produced between coxae IV; colulus long and prominent; leg I longer than IV; and globular abdomen usually bears a dorsal and ventral band differently colored from the background.

It is considered the most venomous of all the spider genera.

Two species were recorded earlier from the Philippines, namely, *L. luzonicus* Dahl, 1902 and *L. hasselti* (Thorell, 1870 (= *L. mactans* (Fabricius)). Cariaso (1969) dealt with the morphology and life history of *L. hasselti* in the Philippines and Alcala (1986) reported it as one of the Philippines' poisonous animals.

Latrodectus mactans (Fabricius)
(Fig. 276a–f)

Aranea mactans Fabricius, 1775. Syst. Entomol.: 432.
Latrodectus mactans Emerton, 1909. Trans. Connection Acad. Sci. 14: 181.

Redescription:
Female: Total length 10.90 mm. Cephalothorax 4.10 mm long, 3.00 mm wide, 2.70 mm high. Abdomen 6.80 mm long, 5.40 mm wide, 5.40 mm high. Cephalothorax brown, about one fourth longer than wide, cephalic area moderately higher than thoracic area. Fovea deep and transverse. Eight eyes in two nearly straight or slightly recurved rows, homogeneous and all clear. Eye diameter (mm): PME = 0.16, AME = ALE = PLE = 0.15. Eye separation: AME–AME = PME–

PME = ALE–AME as long as one eye diameter. PME–PLE 1.87 times AME diameter. Clypeus height large, slightly grooved below AME and hirsute, 3.3 times AME diameter. Sternum dark brown, longer than wide, apical margin with three concavities, posterior end narrowly tapered, extended beyond coxae IV. Labium same color as sternum, except yellow distal margin, and twice wider than long. Maxillae same color as labium, clearly longer than wide, apices projected towards each other. Chelicerae moderately small, promargin with a row of long hairs, distal end of retromargin with black distal apices, except metatarsi and tarsi, without strong spines. Leg formula 1423. Pedipalp brown except yellow-brown femur.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.80	1.60	4.50	5.20	1.75	17.85
2	3.50	1.10	2.50	3.40	1.10	11.60
3	2.80	1.00	1.85	2.50	1.00	9.15
4	3.00	1.50	3.80	5.10	1.40	16.80
Pedipalp	0.80	0.40	0.50	–	0.80	2.50

Abdomen subglobular, black with a broad red dorsal longitudinal band above spinnerets, venter with a red 'hourglass' band (chalk-white when preserved long in ethanol). Epigynum with a transverse ovoid orifice anterior to the epigastric furrow, spermathecal arm with three or four coils, spermathecal sacs wide apart apically and closer to each other posteriorly.

Natural history: A single female with a white egg cocoon (7.5 × 8.5 mm) was collected from peanut intercropped with upland rice in July.

Material examined: PHILIPPINES: *Mindanao Is.*, Bukidnon Prov., Kalilangan, Pangantukan Vill., one female, 28 July 1981, A.T. Barrion and E. Gamila.

Distribution: Widespread in North and South America, Europe, Africa, Oriental region, including Australia (Levi and Levi 1968).

Genus *Argyrodes* Simon

Ariadne Doleschall, 1857. Nat Tjidschr. Nederland Ind. 13: 410.

Argyrodes Simon, 1864. Histoire Naturelle des Araigness, 1st ed.: 253.

Ariamnes Thorell, 1869. Nova Acta Reg. Soc. Uppsala 3(7): 37.

Rhomphaea L. Koch, 1872. Die Arachn. Austral. 1: 289.

Conopistha Karsch, 1881. Berliner Ent. Zeitschr. 25: 39.

Faiditus Keyserling, 1884. Die Spinnen Amerikas, Theridiidae 1: 158.

Bellinda Keyserling, 1884. Die Spinnen Amerikas, Theridiidae 1: 216.

Argyrodina Strand 1928. Arch. Naturgasch. 92: 42.

Neospintharus Exline, 1950. Studies Honoring T. Kincaid, Univ. Washington Press : 112.

Argyrodes Simon represents the largest member in the family Theridiidae, with approximately a little over 200 species.

Members of the genus *Argyrodes* Simon have flat carapace and are rather low posteriorly in the thoracic area; transverse fovea present; high clypeus and ocular region; male's ocular region or clypeus, or both, modified to bear snout-like projections, humps, an open groove or seam below the eyes, clypeus projected ventrally or projecting and containing a furrow; chelicerae bears two or three promarginal teeth and one or two in the retromargin, or a row of small and equal-sized denticles; sternum and labium entire; leg formula 1423; tarsus IV bears no tarsal comb, replaced by few serrated bristles; middle claw longer than outer claws; abdomen bears tubercles, extended, subtriangular to very long, higher than long, and rarely globular, anterior border with stridulating ridges in both sexes and a pair also in carapace; tiny colulus bears setae shorter than the fleshy base; general coloration of abdomen uneven, usually silvery or with silvery patches; male pedipalp with poorly sclerotized median apophysis; radix, sometimes arm-like sclerite between embolus and cymbium, or prominent ventral plate above median apophysis and conductor present; duct loops through the median apophysis, which fits into paracymbium; embolus varies in shape from a complex sclerite, subtriangular, or with a distal thread-shaped portion; cymbium spoon-shaped to truncate; female epigynum a sclerotized plate covered with resinous material; two ovoid to globose receptacles, tube-shaped in some groups.

Dimorphism of secondary sexual characters pronounced in *Argyrodes*. Some males have setae-bearing projections in the head region, clypeus, or both. Eye position and size differ from females. In many cases, the males are larger than females and have larger legs.

Only *A. tripunctata* (Simon) was reported in the Philippines.

Argyrodes saganus (Doenitz and Strand)
(Fig. 277a–e)

Ariamnes saganus Doenitz and Strand, 1906. Abh. Senckenberg. Ges. 30(1–2): 378.

Rhomphaea sagana (Doenitz and Strand) Yaginuma, 1978. Spiders of Japan: 32.

Argyrodes saganus (Doenitz and Strand) Yaginuma, 1986. Spiders of Japan, new ed.: 51.

Rhomphaea nr. *sagana* (Doenitz and Strand) Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24.

Redescription:

Male: Total length 4.23 mm. Cephalothorax 1.35 mm long, 0.70 mm wide, 0.58 mm high. Abdomen 2.88 mm long, 0.68 mm wide, 0.85 mm high. Cephalothorax yellow, with subdorsal longitudinal broad bands, nearly twice longer than wide, cephalic area with a porrect rounded tubercle, except constricted subbasal area in

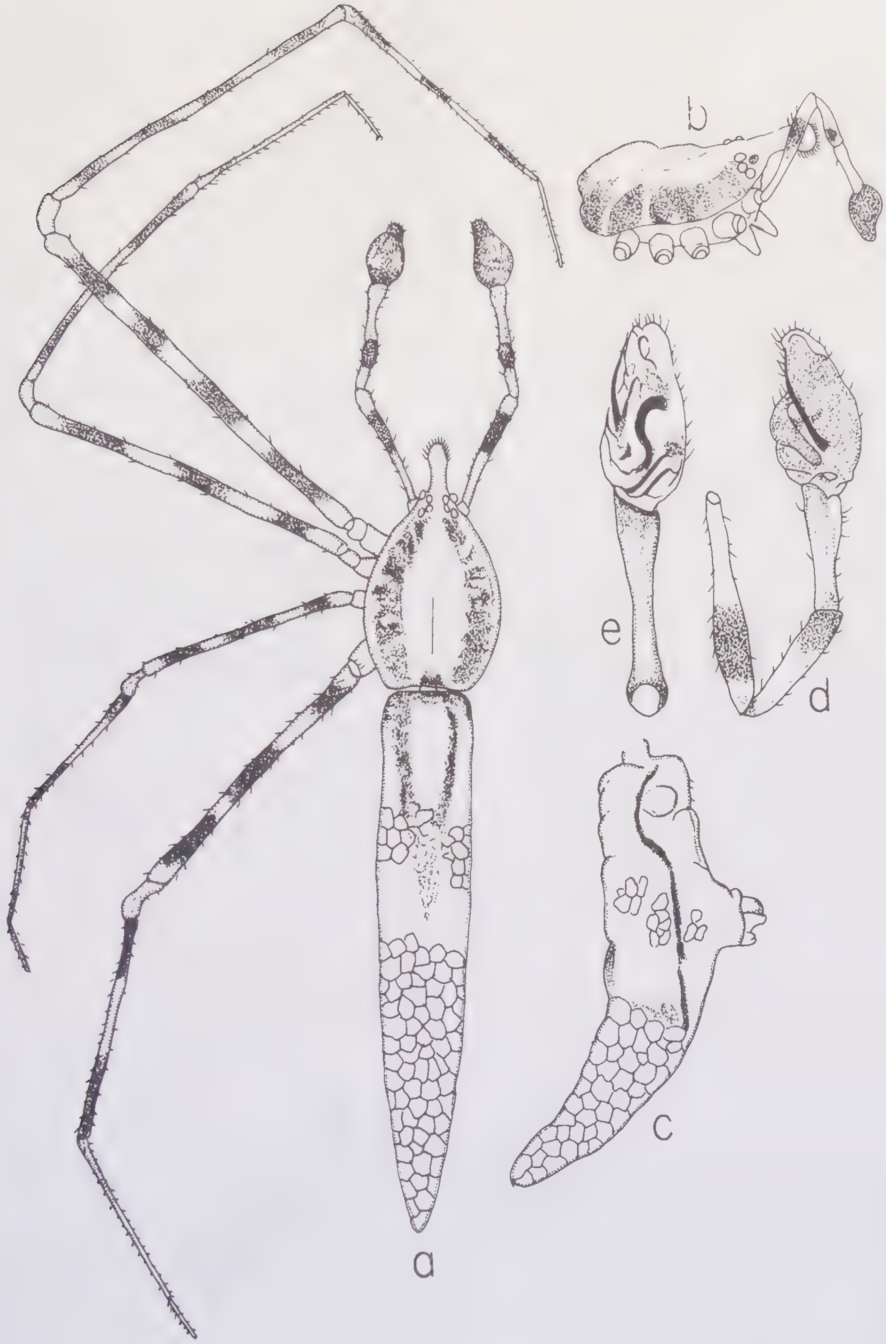


Fig. 277. Male *Argyrodes saganus* (Doenitz and Strand) (a); side view of carapace (b) and abdomen (c); and retrolateral (d) and ventral (e) views of pedipalp.

front of ME, thoracic area much broader than the cephalic. Subposterior of the cephalic area higher than the thoracic area. Eight eyes in two rows, almost all along the base of the tubercle, AE strongly recurved, PE straight to slightly procurved. Eye diameter (mm): AME = 0.08, PME = 0.06, ALE = PLE = 0.05. Eye separation: AME–AME almost three times AME diameter, AME–ALE one half AME diameter, PME–PME twice PME or 1.4 times AME diameter, PLE–PME as long as one AME diameter. LE contiguous. Clypeus height moderately wide, 1.6 times AME diameter. Sternum longer than wide, grayish yellow-brown with a yellowish median longitudinal band, posterior end blunt between coxae IV, apicolateral border along sides of brown labium diagonal or sigmoid-like shape. Labium wider than long, roundish distal end light yellow. Maxillae yellow, longer than wide, subbassally broad, and slender in the apical one half. Chelicerae small, yellow with gray flecks. Legs slender and long, yellow with brownish bands alternating with yellow ones in the femora, tibiae,

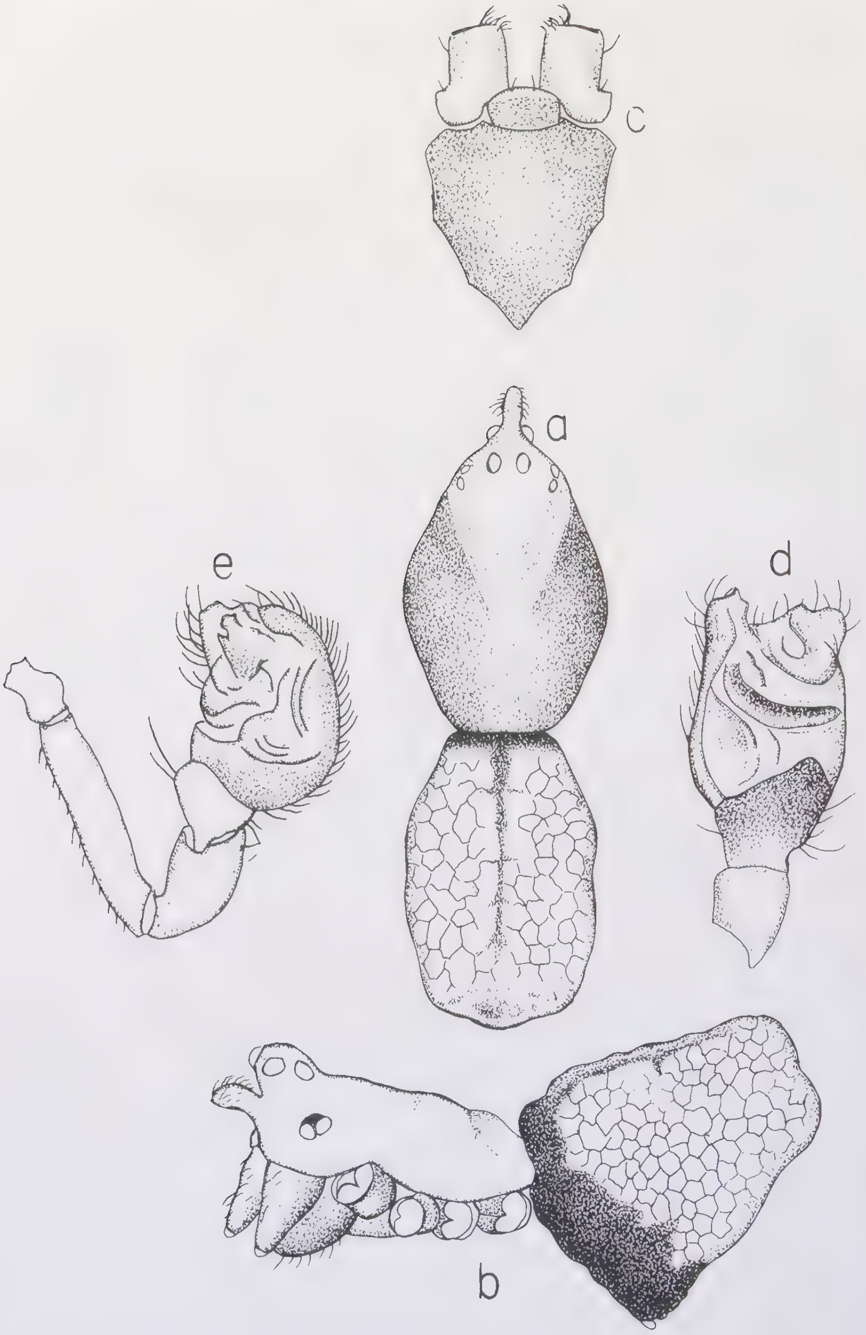


Fig. 278. Male *Argyrodes bonadea* (Karsch), dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); and ventral (d) and retrolateral (e) views of pedipalp.

and metatarsi of all legs, without strong spines. Leg formula 1423. Pedipalp yellow, except brown bands in the swollen subapex of femur, apex of patella, and mid-half of tibia, embolus with a slightly transparent, enlarged, and open tip, and conductor with five teeth on one side.

Abdomen silvery white, long, and tapered to a point posteriorly, subtriangular in lateral view with the spinnerets basoventral one third of the abdomen, basal one half of abdomen more robust than apical one half.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.00	0.35	3.30	1.95	1.00	10.60
2	2.35	0.33	1.75	1.18	0.70	6.31
3	1.30	0.26	0.83	0.70	0.48	3.57
4	2.90	0.36	1.80	1.75	0.78	7.59
Pedipalp	1.08	0.45	0.45	–	0.48	2.46

Immatures: Total length 2.75–4 mm long. Cephalothorax as in the male except for the absence of the tubercle, basal one third with a transverse constriction running from side to side. Legs with alternating yellow and brown band in the femora and tibiae. Abdomen

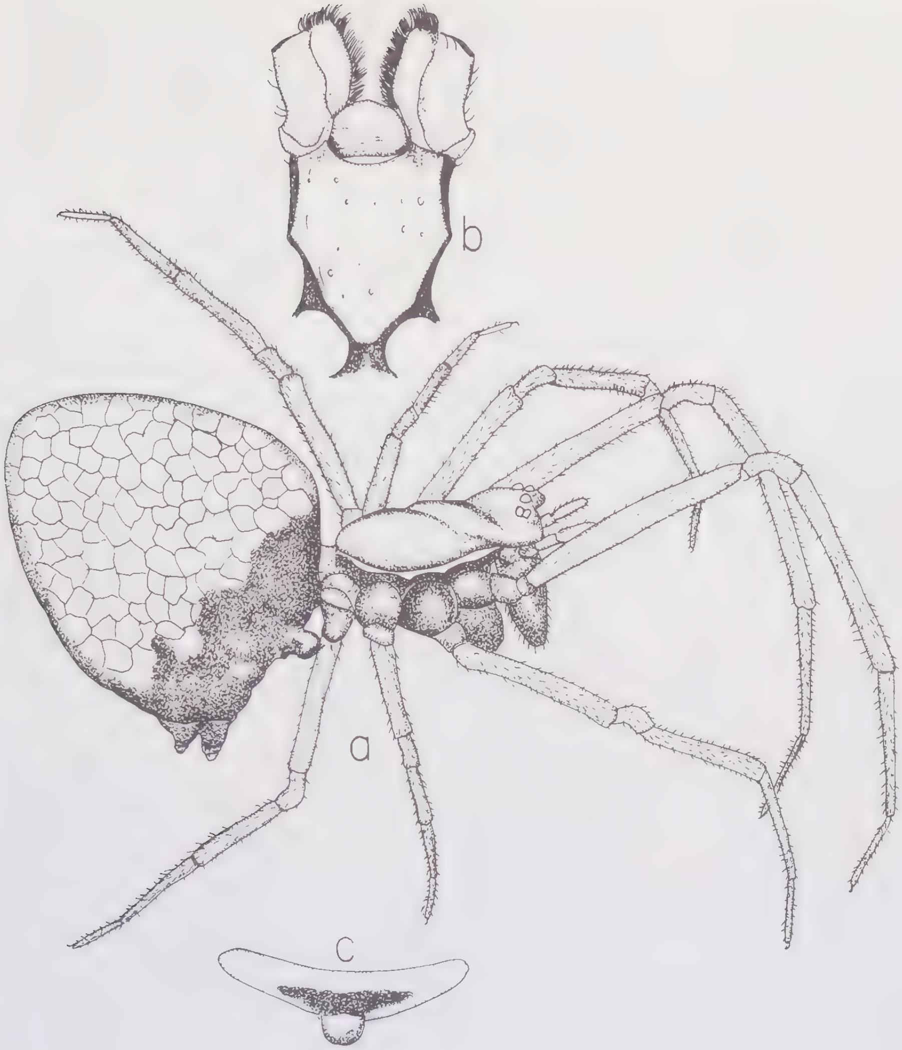


Fig. 279. Female *Argyrodes bonadea* (Karsch) (a); sternum, labium, and maxillae (b); and epigynum (c).

uniformly silvery, posterior end pointed. In lateral view, the abdomen is strongly an isotriangle with the spinnerets on one of the bases.

Natural history: Two males and two immatures were D-Vac collected from lowland irrigated rice in April.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., two males and two immatures, 28 April 1980, A.T. Barrion.

Distribution: Japan and the Philippines.

Argyrodes bonadea (Karsch)

(Figs 278a–e, 279a–c)

Conopistha bonadea Karsch, 1881. Berl. Entomol. Zeitschr. 25: 39.

C. nr. *bonadea* Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24.

Redescription:

Male (Fig. 278a–e): Total length 2.26 mm. Cephalothorax 1.18 mm long, 0.73 mm wide, 0.80 mm high. Abdomen 1.08 mm long, 0.65 mm wide, 1.05 mm high. Cephalothorax brownish yellow, with gray tinges and black eye margins, cephalic area elevated to a 45° angle from the posterior of the thoracic area, ME on a tubercle, frontomedian clypeus with a porrect tubercle covered with hairs on its tip. Eight eyes in two strongly recurved rows, ME in an elevated area and LE located below on a level with the porrect frontomedian tubercle of clypeus. Eye diameter (mm): AME = 0.09, PLE = 0.08, ALE = PME = 0.07. Eye separation: AME–AME one third narrower than one AME diameter, AME–ALE 2.2 times AME diameter, PME–PME nearly as wide as one AME diameter, PME–PLE twice PME or 1.6 times AME diameter. Clypeus height very large, 3.3 times AME diameter. LE contiguous, PLE slightly higher than ALE and vertical, ALE more or less transverse. Sternum blackish brown, darker along margins, longer than wide, posterior end extended between coxae IV. Labium same color as sternum, distal end light yellow, wider than long. Maxillae longer than wide, almost parallel to each other, apices truncated. Chelicerae small, as long as height of clypeus, promargin with three teeth. Legs moderately long and slender, yellow except for a narrow black ring on the apices of tibiae I–IV. Tibia I d/l = 0.08. Metatarsus I/tarsus I = 1.92. Leg formula 1243. Pedipalp as long as metatarsus I, tarsi and tibiae reddish brown. Cymbium blackish brown, rather ovoid.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.70	0.38	1.40	1.23	0.64	5.35
2	0.90	0.28	0.80	0.68	0.45	3.11
3	0.58	0.19	0.31	0.34	0.29	1.71
4	0.84	0.23	0.53	0.58	0.40	2.58
Pedipalp	0.45	0.20	0.15	–	0.43	1.23

Abdomen oblong, partly truncated anteriorly and narrowly pointed posteriorly, triangular laterally, silvery white with a black anterior part, thin median longitudinal band, ventral and ventrolateral area.

Female (Fig. 279a–c): Total length 3.24 mm. Cephalothorax 1.12 mm long, 0.80 mm wide, 0.70 mm high. Abdomen 2.12 mm long, 1.6 mm wide, 2.02 mm high. Cephalothorax black or reddish brown, similar to mandibles, radial furrows in thoracic area absent. Head distinct and normal, AE row strongly recurved, and PE row nearly straight. Median ocular quadrangle wider in front than behind. Abdomen silvery, with a longitudinal median and a ventrolateral black band, subtriangular and mound-like in lateral view, and about three times higher than cephalothorax. Legs yellow, except apical edges of each segment reddish brown. Leg formula 1243. Pedipalp yellow with reddish brown tibia and tarsus. Epigynum shiny and reddish brown, with a small tongue-like scape near epigastric furrow.

Natural history: Both females were taken from the base of the rice plants associated with the young brown planthopper, *Nilaparvata lugens* (Stål) nymphs in January. Spiderlings were taken from the web of *Argiope catenulata* (Doleschall).

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, one male, 9 January 1980, and one female, 4 March 1979, A.T. Barrion; Liliw, Tuybaana Vill., one female, 24 April 1980, T.J. Perfect; Batangas Prov., Lipa City, Maraouy Vill., four spiderlings, 2 January 1989, A.T. Barrion.

Distribution: Japan, Philippines (new record).

Genus *Steatoda* Sundevall

Steatoda Sundevall, 1833. Consp. Arachn.: 16.

Members of the genus *Steatoda* are moderately large (6–12.00 mm long) theridiids, possessing contiguous lateral eyes; AME the largest, larger than ALE, and MOQ slightly broader in front than behind or a square; clypeus height about as wide as ocular area; sternum pointed behind, produced between coxae IV; males with punctated carapace and sternum, punctations slight in female sternum; retromargin toothless; abdomen with well-developed stridulating organ in males; legs relatively short; tibia I d/l about 0.16 and Tm I = 0.45.

Steatoda is a widely distributed genus, comprising about 50 species. It is recorded for the first time in the Philippines.

Steatoda ngipina new species

(Fig. 280a–f)

Description:

Female: Total length 12.00 mm. Cephalothorax 3.67 mm long, 3.17 mm wide, 2.48 mm high. Abdomen 8.33 mm long, 6.67 mm wide, 6.50 mm high. Cephalothorax dark reddish brown to black, fovea black, moderately deep and transverse, lateral margins with short hairs. Eight eyes in two recurved rows, homogeneous, and all clear, AE more strongly recurved than PE. Eye diameter (mm): AME = ALE = PLE = 0.20 and PME = 0.16. Eye separation: AME–AME 0.6 AME diameter and as long as PME separation, AME–ALE 0.8 eye diameter, PME–PLE 1.4 times PME diameter. LE touching each other. Clypeus height large, 2.5 times AME diameter. Sternum black, posterior end narrowly extended beyond coxae IV, margins opposite each coxa notched. Labium dark reddish brown, wider than long, apical margin medially notched. Maxillae same color as labium, except the yellow latero-inner margins. Chelicerae moderately small with two promarginal teeth. Legs almost black, except brown metatarsi and greyish brown tibiae III and IV. Femora I to IV serrated or file-like with numerous teeth. Tibia I d/l = 0.13, Tm I = 0.22, metarsus I/tarsus I = 2.53. Leg formula 1423. Pedipalp same color as legs, patella with a long subapical dorsal erect seta and a subbasal curved one shorter than the subapical, tibia with a long dorsal subapical seta as long as tibial length.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.17	1.83	5.00	5.50	2.17	20.67
2	4.33	1.50	3.67	3.33	1.50	14.33
3	3.17	1.17	2.25	2.50	1.08	10.17
4	5.50	1.67	4.17	4.17	1.75	17.26
Pedipalp	1.08	0.50	0.58	–	1.08	3.24

Abdomen subglobular, black with four sigilla, and white marking narrowly extended laterally in the apical one half, venter brown with a pair of oblong chalk-white spots anterior to the spinnerets and a broad spherical spot between epigynum and spinnerets. Colulus relatively large. Epigynum a broad subtriangular sclerotized plate dorsad of the epigastric furrow, with a pale black U-shaped band in the middle.

Etymology: Named after the teeth ('ngipin' in Tagalog) in the femora of legs.

Natural history: The holotype female was found in a small soil crevice in a big boulder alongside the road between acidic upland ricefields in September.

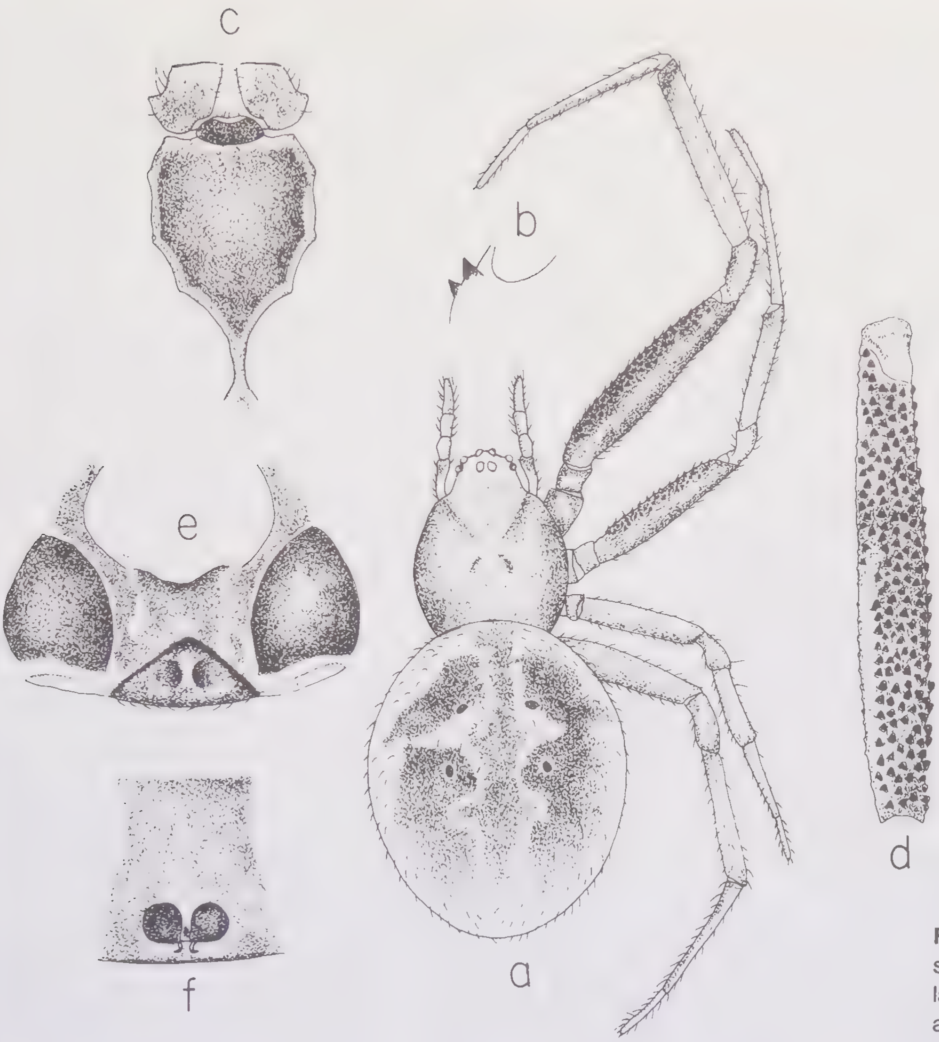


Fig. 280. Female *Steatoda ngipina* n. sp. (a); promarginal teeth (b); sternum, labium, and maxillae (c); femur I (d); and dorsal (e) and ventral (f) teeth of epigynum.

Material examined: PHILIPPINES: *Laguna Prov.*, Kalayaan, Kalayaan Hydroplant Station Vill, holotype female, 28 September 1985, A.T. Barrion.
Distribution: Philippines.

Genus *Enoplognatha* Pavesi

Drepanodus Menge, 1868. Schr. Naturf. Gesell. Danzig 2(2): 241.
Phyllonethis Thorell, 1869. Nova Acta Soc. Uppsala 3(7): 90.
Enoplognatha Pavesi, 1880. Ann. Mus. Civ. Stor. Nat. Genova 15: 325.
Marmatha Chamberlin and Ivie, 1942. Bull. Univ. Utah, Biol. Ser. 7(1): 40.
Rugatha Chamberlin and Ivie, 1942. Bull. Univ. Utah, Biol. Ser. 7(1): 42.

Members of the genus *Enoplognatha* Pavesi are medium-sized (2–9 mm long) comb-footed spiders with slightly longer than wide carapace; male carapace bears a stridulating area on the lateral sides of the pedicel; eyes subequal in size or anterior medians slightly smaller; AE row straight viewed frontally and PE row straight as seen from above; coxae IV separated by about one half their diameter; sternum pointed between coxae IV; chelicerae well enlarged in male and female chelicerae each with teeth in promargin and a tooth in the retromargin; leg I as long as IV and longest, III shortest; abdomen globular to slightly flattened dorsoventrally, male abdomen with a rasp of setae on a more or less sclerotized carina above pedicel; colulus between anterior spinnerets, two setae at base or sides of colulus (in many species, a median seta or two median setae and a subbasal one with one close to tip); male pedipalp has a distinct ventral radix supporting embolus; non-functional conductor projecting above radix; female epigynum heavily sclerotized with a pair of seminal receptacles.

Shrub- or foliage-inhabiting *Enoplognatha* are usually white or light-colored, while the ground or litter forms are dark-colored.

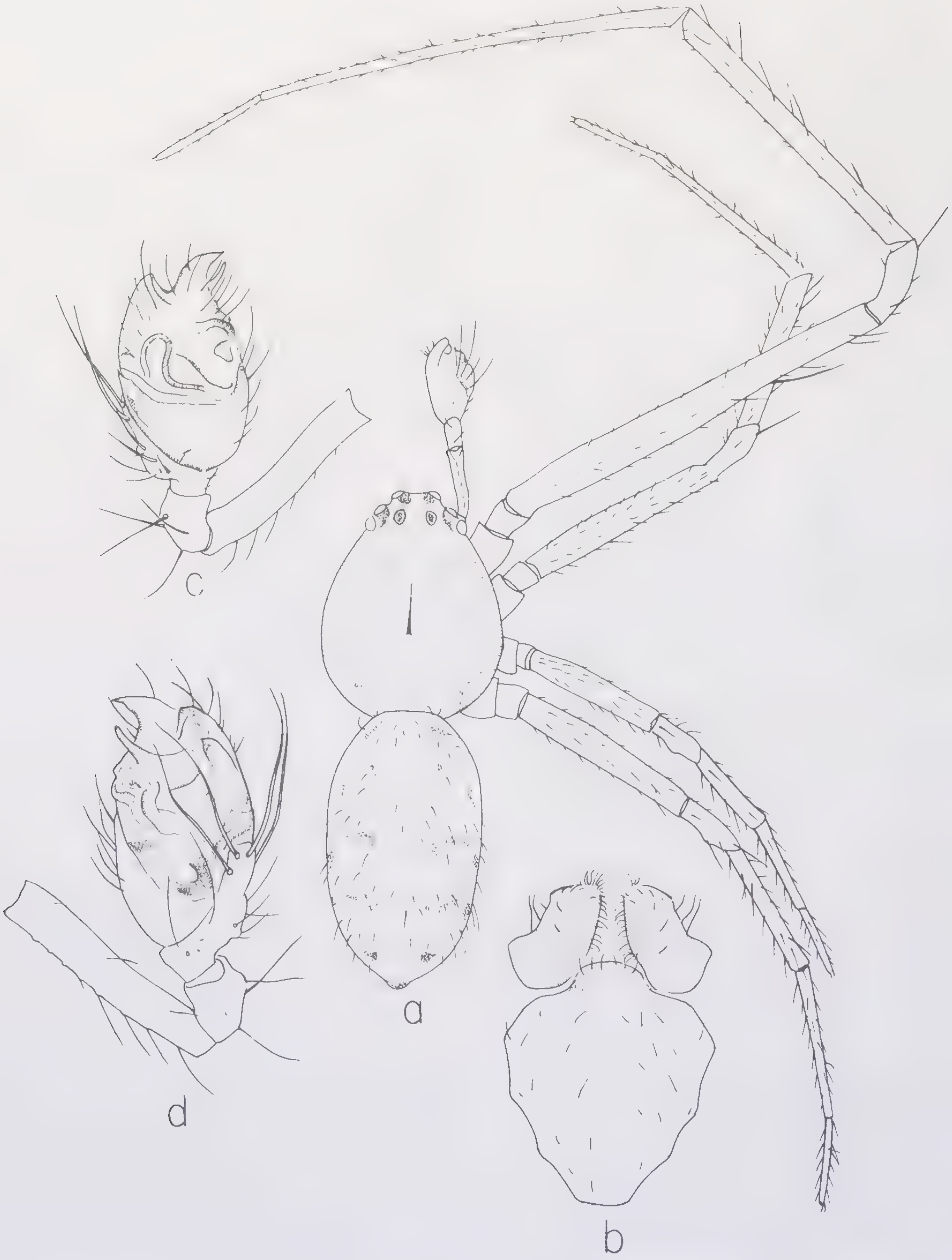


Fig. 281. Male *Enoplognatha philippinensis* n. sp. (a); sternum, labium, and maxillae (b); and ventrolateral (c) and retrolateral (d) views of pedipalp.

Enoplognatha philippinensis new species
(Fig. 281a–d)

Description:

Male: Total length 2.55 mm. Cephalothorax 1.05 mm long, 1.00 mm wide, 0.63 mm high. Abdomen 1.50 mm long, 0.95 mm wide, 0.98 mm high. Cephalothorax yellow, except grayish lateral margins and fovea and black eye margins, globular dorsally with moderately elevated cephalic and flattened thoracic area. Eight eyes in two rows, AE strongly recurved and PE slightly recurved. Eye diameter uniform in size, all 0.08 mm. Eye separation: AME–AME 1.6 times AME diameter, as long as PME–PME separation, AME–ALE as long as one AME diameter, PME–PLE a little longer than one AME diameter. Clypeus height very large, three times AME diameter. Sternum uniformly yellow with a few hairs, posterior end semitruncated between coxae IV, longer than wide. Labium wider than long, same color as maxillae and sternum, distal rounded margin pale yellow. Maxillae longer than wide, semiconverging towards apex. Chelicerae moderately large basally, uniformly yellow, and promargin with three teeth, middle tooth the smallest and the outer ones equally large. Legs long and slender, yellow except brownish apices of tibiae. Tibia I with two dorsal spines, its a/b = 0.23, l/d = 10.28, length of spine/diameter at its insertion = 2.20. Metatarsus I/tarsus I = 3.12. Tm I = 0.40. Leg formula 1243. Pedipalp yellow except brownish cymbium, apex of cymbium cleft, with an inward-pointed tip, median apophysis spike-like and triangular, subapex of tibia with long hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.20	0.50	1.85	2.43	0.78	7.76
2	1.20	0.44	1.04	1.31	0.53	4.52
3	0.88	0.31	0.55	0.73	0.33	2.80
4	1.30	0.30	1.00	1.28	0.41	4.29
Pedipalp	0.53	0.20	0.18	–	0.60	1.51

Abdomen yellow and ovoid, with a sublateral ring of interrupted black bands forming nine spots enclosing four pairs of globular to transverse black bands. Venter uniformly light yellow, including the spinnerets, except the brown spot subanteriorly or posterior to the pedicel.

Etymology: Named after the type locality.

Natural history: The holotype male was taken from a yellow pan trap in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 12 December 1984, A.T. Barrion.

Distribution: Philippines.

Enoplognatha kalaykayina new species
(Fig. 282a–e)

Description:

Male: Total length 2.54 mm. Cephalothorax 1.12 mm long, 0.96 mm wide, 0.43 mm high. Abdomen 1.42 mm long, 0.90 mm wide, 0.78 mm high. Cephalothorax yellow-brown, except black eye rims and lateral margins of carapace, and brown short fovea. Cephalic area elevated and thoracic area partly flattened dorsoventrally. Eight eyes in two rows, AE row strongly recurved and slightly shorter (0.50 mm) than the straight PE row (0.54 mm). Eye diameters (mm) subequal: AME = ALE = PME = PLE = 0.08. AME–AME and PME–PME separations 1.5 times AME diameter. AME–ALE separation three fourths AME diameter. PME–PLE separation one AME diameter. Median ocular quadrangle a little wider posteriorly (0.28 mm) than the anterior (0.27 mm). Clypeus height twice AME diameter. Sternum yellow, heart-shaped, with rounded posterior end fitting between coxae and apicomedian concave housing base of labium, longer (0.64 mm) than wide (0.60 mm), and broadest between coxae I and II. Labium yellow, 2.2 times wider than long with straight distal end. Maxillae same color as labium and sternum, except for brown serrulae and inner margins, longer than wide, and apico-inner parts partially converging. Chelicerae each with five equally sized retromarginal teeth, three promarginal teeth with a small median tooth, and a seta dorsad of promargins, with brush-like dorsobasal two thirds. Legs yellow-brown without femoral spines, two dorsal spines (one long apical and a short basal) in patellae I–IV, tibiae II and IV with two and I and III with one, length of femora, patellae, and tibiae 1243, venter of leg segments with more thin setae than dorsum, tarsi three-clawed. Pedipalp's cymbium bifurcated distally, with a small partially curved and pointed prolateral, blunt inwardly grooved retrolateral, lined with numerous long hairs dorsally and laterobasally. Terminal apophysis with a broad base and its horn-like upwardly directed tip touching the pointed prolateral part of cymbium, retrolateral tibial apophysis thin with rounded tip and five long hairs near apical margins.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.10	0.56	1.72	–	–	4.38
2	1.30	0.45	1.10	1.25	0.53	4.63
3	0.80	0.25	0.50	0.73	0.35	2.63
4	1.25	0.30	1.00	1.20	0.45	4.20

Abdomen ovoid, yellow, with five pairs of subdorsal gray bands and a pair each laterally, venter uniformly yellow, spinnerets visible ventrally, encircled by a white ring.

Etymology: The specific ephithet was derived from the Tagalog term 'kalaykay' for the rake-like character of the pedipalp.

Natural history: A single specimen collected from a 3-m-high stationary suction trap in September.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype male, 17 September 1980, T.J. Perfect.

Distribution: Philippines.

Enoplognatha tuybaana new species
(Fig. 283a–g)

Description:

Male: Total length 2.28 mm. Cephalothorax 1.08 mm long, 0.86 mm wide, 0.60 mm high. Abdomen 1.20 mm long, 0.76 mm wide, 0.68 mm high. Cephalothorax yellowish brown with a black longitudinal band anterior to foveal line and black eye margins. Cephalic area as high as the thoracic area except the lowered eye region. Eight eyes in two rows, all clear except AME, AE more strongly recurved than PE. Eye diameter (mm): AME = PME = 0.09, PLE = 0.08, ALE = 0.06. Eye separation:

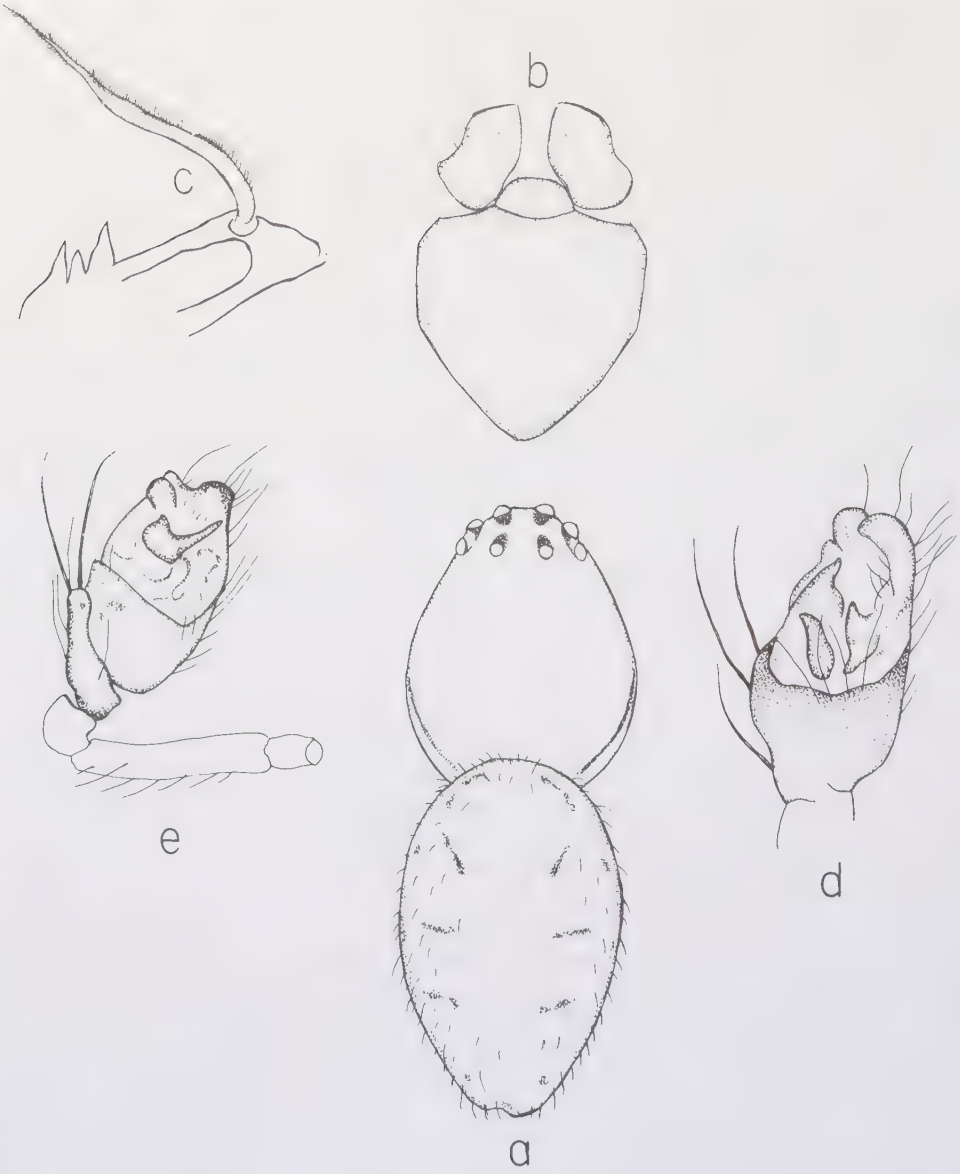


Fig. 282. Male *Enoplognatha kalaykayina* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and retrolateral (d) and ventral (e) views of pedipalp.

AME–AME one ninth smaller than one AME diameter, PME–PME ca. one half AME diameter, AME–ALE = PME–PLE two thirds AME diameter. Clypeus height one fourth larger than one AME diameter, midapical margin with a black triangular band. Sternum yellow-brown, except black marginal bands opposite each coxa, black median longitudinal band interrupted in the middle, posterior margin bluntly rounded between coxae IV, midapical border somewhat contiguous to labium. Maxillae same color as sternum, longer than wide, broad basally, and converging apically. Chelicerae vertical and projected ventrad, as long as length of AE, constricted medially, and promargin with a tooth. Fang moderately long, longer than greatest width of chelicerae. Legs long and slender, yellow to yellowish brown with ventral black spots in the femora, tibiae, and metatarsi. Tarsi with less pronounced ventral black spots. Femora I to IV rough with small teeth, more pronounced in the venter of femur I. Tibiae III and IV with two or three strong dorsal spines. Leg formula 1243. Pedipalp nearly one half total length of leg III, femur with small teeth, ratio of length of tibia (b) over the diameter (a) = 4.67, and embolus with a basal tooth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.72	0.36	1.48	1.24	0.46	5.26
2	1.40	0.34	1.18	1.00	0.44	4.36
3	0.90	0.24	0.56	0.72	0.36	2.78
4	1.00	0.32	0.50	0.68	0.32	2.82
Pedipalp	0.40	0.16	0.09	–	0.70	1.35

Abdomen yellow and mottled with black spots,

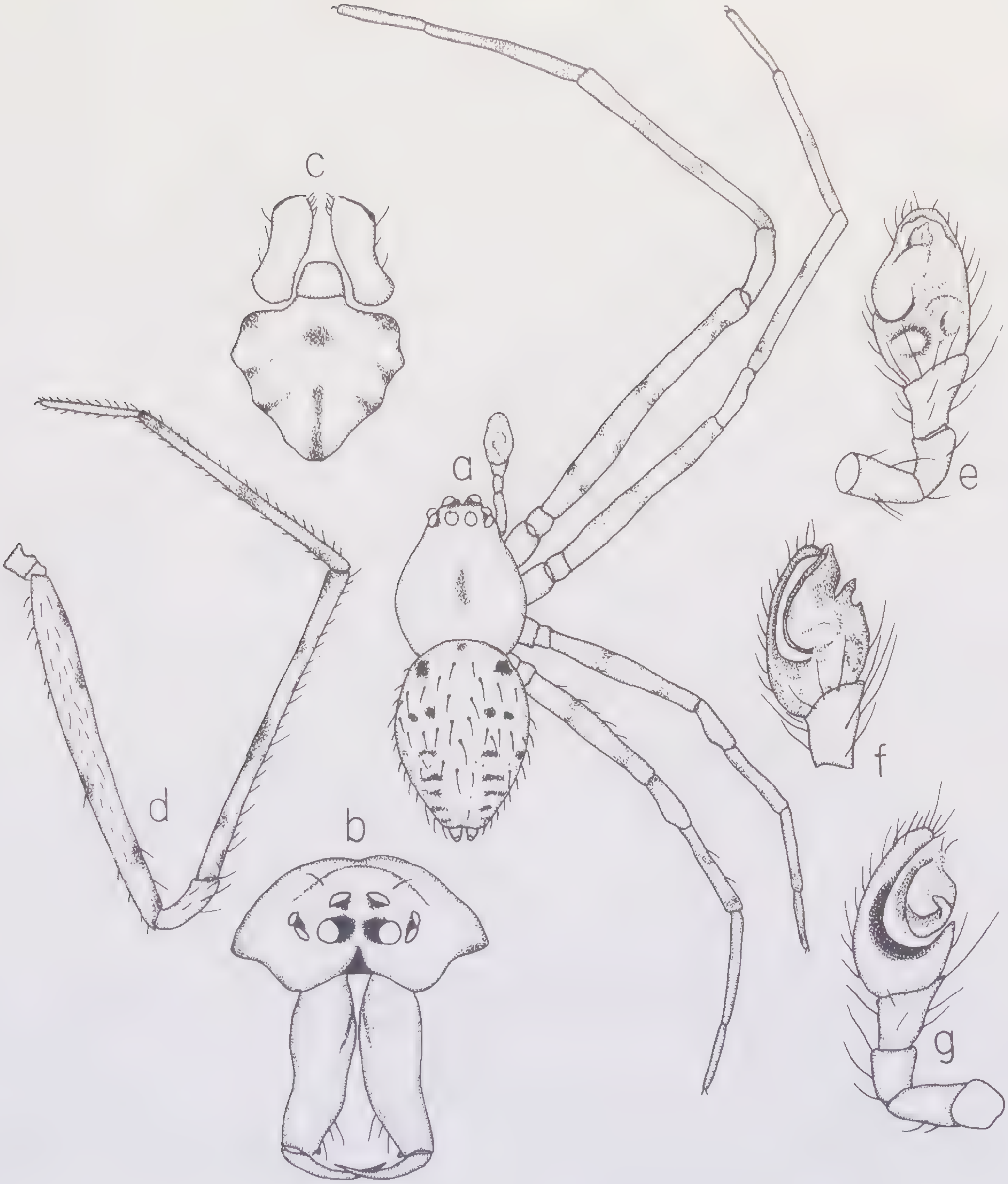


Fig. 283. Male *Enoplognatha tuybaana* n. sp. (a); frontal view of cephalothorax (b); sternum, labium, and maxillae (c); leg I (d); and ventral (e) and lateral (fg) views of epigynum.

ovoid, with posterior spinnerets visible dorsally.
Etymology: Derived from the typed locality.
Natural history: The holotype male was collected through FARMCOP suction in April and the paratype male was taken from the base of rice tillers, also in April.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype male, 16 April 1981, T.J. Perfect, male paratype, same locality as holotype, 10 April 1981, E. Ferrer.
Distribution: Philippines.

Enoplognatha yelpantrapensis new species
(Fig. 284a–i)

Description:
Male: Total length 1.81 mm. Cephalothorax 0.73 mm long, 0.69 mm wide, 0.46 mm high. Abdomen 1.08 mm long, 0.65 mm wide, 0.60 mm high. Cephalothorax yellow-brown, black eye margin, grayish black lateral margin of thorax and broad foveal band, cephalic area only slightly elevated from the thoracic area. Eight eyes

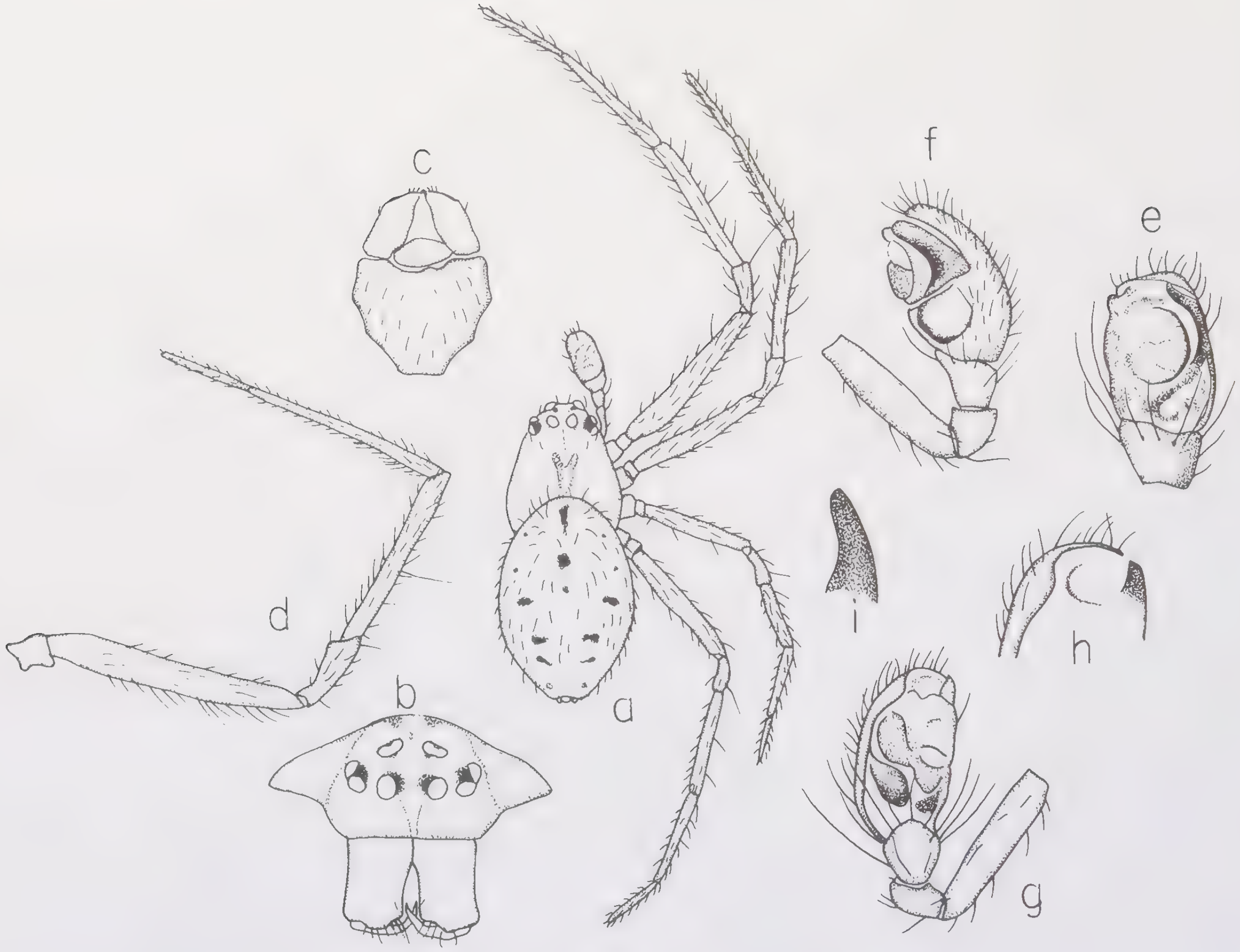


Fig. 284. Male *Enoplognatha yelpantrapensis* n. sp. (a); frontal view of cephalothorax (b); sternum, labium, and maxillae (c); leg I (d); ventral (e) and lateral (fg) views of pedipalp; apex of cymbium and apophysis (h); and terminal apophysis (i).

in two rows, AE strongly recurved, and PE almost straight. Eye diameter (mm): AME = PME = 0.10, ALE = PLE = 0.08. Eye separation: AME–AME one AME diameter. ALE–AME one half ALE diameter, PME–PME a little less than one half AME diameter, PME–PLE as long as one PLE diameter and one fifth shorter than one AME diameter. Clypeus height small, about 0.8 AME diameter. Sternum yellow, wider than long, posterior end broadly truncated, anterior end slightly concave medially for reception of the labium. Maxillae and labium same color as sternum. Maxillae longer than wide, converging apically. Chelicerae yellow, small, and vertical, with three minute retromarginal teeth, promargin with only five setae, basal setae the longest and stoutest. Legs yellowish brown, relatively slender, tibiae I to IV each with a strong and erect middorsal spine. Leg formula 1243. Pedipalp as long as metatarsus IV, median apophysis with blunt end, embolus short and partly concealed towards the apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.20	0.26	0.95	0.93	0.54	3.88
2	1.08	0.25	0.85	0.88	0.50	3.56
3	0.80	0.23	0.58	0.60	0.38	2.59
4	1.00	0.28	0.75	0.78	0.45	3.26
Pedipalp	0.31	0.11	0.13	–	0.23	0.78

Abdomen yellow with 15 black spots (six pairs along the margins and three unpaired spots in the midapical one half), ovoid, and spinnerets hardly visible dorsally. Venter yellow except brownish apical one third above epigastric furrow.

Etymology: Derived from the collecting device it was taken from, a yellow pan trap.

Natural history: A single female was isolated from the yellow pan trap catch set in the margin of a ricefield in September.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon

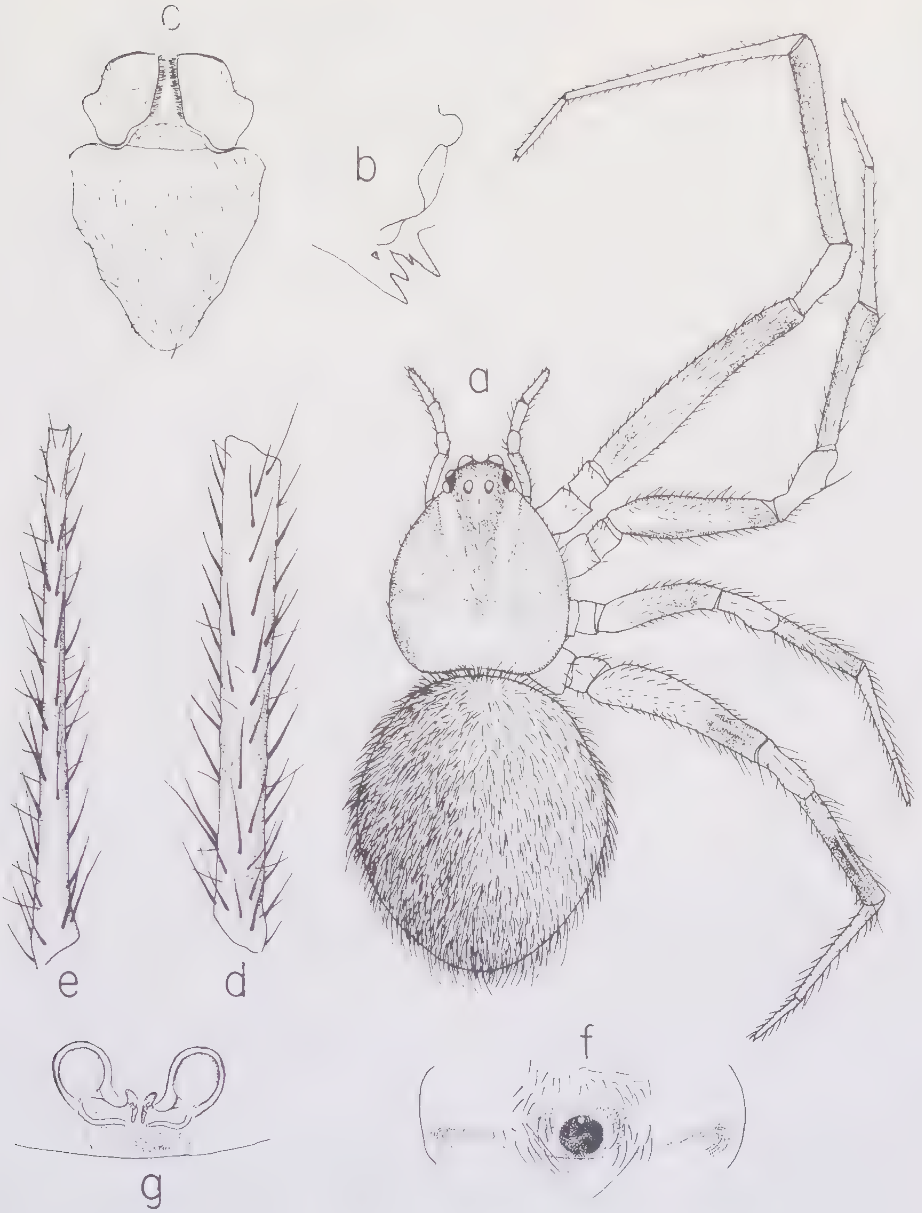


Fig. 285. Male *Enoplognatha cariasoi* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); tibia I (d); metatarsus I (e); and dorsal (f) and ventral (g) views of epigynum.

Prov., Real, Llavac Vill., holotype male, 20 September 1984, A.T. Barrion.
Distribution: Philippines.

Enoplognatha cariasoi new species
(Fig. 285a–g)

Description:
Female: Total length 4.32 mm. Cephalothorax 1.92 mm long, 1.56 mm wide, 0.96 mm high. Abdomen 2.40 mm long, 2.20 mm wide, 2.00 mm high. Cephalothorax dark brown with a blackish brown band radiating from the shallow grooved fovea and a yellow band thereafter. Ocular rims black. Eight eyes in two recurved rows, AE row more strongly recurved than PE row, PE row longer (0.66 mm) than AE row (0.62 mm). Eye diameter (mm) in decreasing order: AME = 0.14, PLE = 0.12, PME = 0.11, ALE = 0.10. AME–AME separation 0.7 AME diameter or one ALE. AME–ALE separation 0.6 ALE or 0.4 AME diameter. PME–PME separation a little less than one PME diameter. PME–PLE separation 1.1 PLE diameter. Median ocular quadrangle broader in front (0.38 mm) than behind (0.32 mm). Clypeus slightly inclined, height 1.9 AME diameter. Sternum brown, rather triangular, with brown erect hairs, a little longer (1.04 mm) than wide (1.00 mm), widest between coxae I and II. Labium yellow-brown with apical one third yellow, tip almost straight to slightly rounded. Maxillae

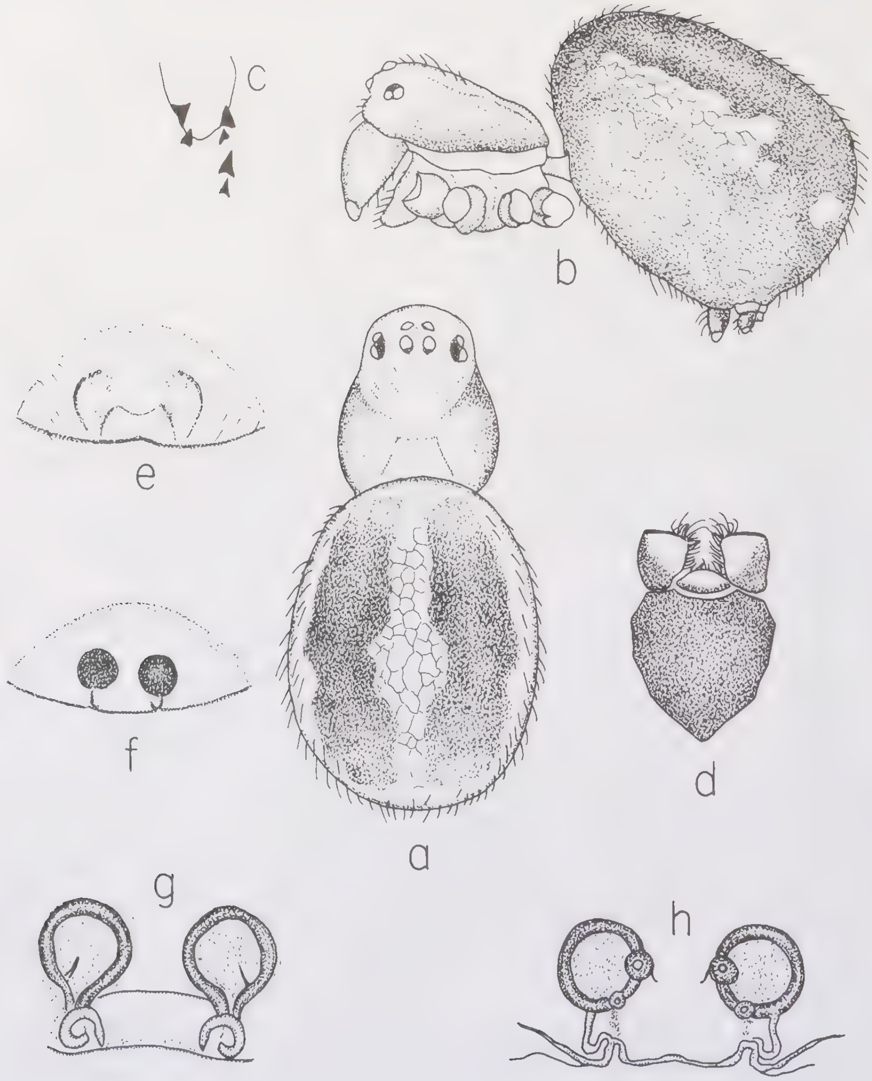


Fig. 286. Female *Enoplognatha malapahabanda* n. sp., dorsal (a) and lateral (b) habitus; cheliceral teeth (c); sternum, labium, and maxillae (d); and dorsal (e) and ventral (f–h) views of epigynum.

brown with yellow inner margins opposite scopulae, outer margins sigmoid-shaped with serrulae towards distal end. Chelicerae brown with two bifurcated promarginal and a simple retromarginal teeth. Legs hirsute, relatively long and slender, grayish brown except yellow tarsi, metatarsus (Tm) I = 0.16. L/d of tibia I = 7.26. Metatarsus I/tarsus I = 2.86. Total length of leg I/cephalothorax length = 4.88. Length of femur I/cephalothorax length = 1.46. Tarsi three-clawed with five to seven and one or two teeth in the superior and inferior claws, respectively. Leg formula 1423. Pedipalp brown, as long as metatarsus II, single-clawed with seven teeth.

Abdomen globular, blackish brown, and thickly hirsute, spinnerets well concealed, colulus and paired setae absent. Epigynum dorsad with a black globular sclerotized and slightly elevated plate, internally (the plate) cleft anteriorly, spermathecae globular and wide-mouthed posteriorly.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.80	0.96	2.36	2.40	0.84	9.36
2	1.88	0.80	1.60	1.76	0.74	6.78
3	1.40	0.60	1.08	1.32	0.64	5.04
4	2.12	0.80	1.72	1.72	0.72	7.08
Pedipalp	0.56	0.28	0.36	–	0.60	1.80

Etymology: The species was named after Dr B. Cariaso, my first teacher in entomology.

Natural history: Only a female specimen was collected in December from the water pan of a kerosene light trap set near slash-and-burn dryland rice in cleared dipterocarp forest.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype female, 3 December 1985, A.T. Barrion.

Distribution: Philippines.

Enoplognatha malapahabanda new species
(Fig. 286a–h)

Description:
Female: Total length 2.68 mm. Cephalothorax 0.98 mm long, 0.75 mm wide, 0.63 mm high. Abdomen 1.70 mm long, 1.25 wide, 1.25 mm high. Cephalothorax brown, except for a broad longitudinal yellow band posterior to PE and black eye margins, cephalic area higher than the thoracic area, and constriction distinct between cephalic and thoracic areas. Eight eyes in two rows, AE and PE strongly recurved. Eye diameter (mm): PME = 0.08, AME = ALE = PLE = 0.06. Eye separation: AME–AME one third longer than one AME diameter, AME–ALE twice AME diameter, PME–PME as long as one AME diameter, PME–PLE 2.3 times AME diameter. Clypeus height moderately small, one third wider than one AME diameter. Sternum black, as long as broad, posterior end narrowly rounded between coxae IV. Labium wider than long, same color as sternum and maxillae, except yellow distal margins. Maxillae a little wider than long, retromargins yellow. Chelicerae small, stout basally, promargin and retromargin with four and two teeth, respectively. Legs yellowish brown, with black patches in femora, apices of patellae, mid and tip of tibiae, tibia I with a strong prolateral spine and two trichobothria, patellae with a strong subapical dorsal spine, tibia I d/l = 0.18, tibia I a/b = 0.32, Metatarsus I/tibia I = 0.84, Metatarsus I/tarsus I = 1.47. Leg formula 1243. Pedipalp yellow with gray tinge, as long as patella and tibia of leg II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.80	0.33	0.63	0.53	0.36	2.65
2	0.83	0.30	0.60	0.49	0.35	2.57
3	0.55	0.25	0.34	0.33	0.28	1.75
4	0.80	0.33	0.58	0.50	0.34	2.55
Pedipalp	0.28	0.15	0.18	–	0.29	0.90

Abdomen moderately ovate, black with a median and lateral yellow bands. Laterals and venter black including spinnerets. Margin of spinnerets yellow. Colulus small. Epigynum with a moderately M-shaped orifice, spermathecal sacs spherical and parallel to each other, fertilization tubes moderately long.
Etymology: Derived from the broad longitudinal band on the abdominal dorsum.
Natural history: A single female was D-Vac-collected from the completely dry grassland in April.
Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana-Piat, Domsat Vill., holotype female, 18 April 1981, A.T. Barrion and B. Canapi.
Distribution: Philippines.

Enoplognatha pulatuberculata new species
(Fig. 287a–d)

Description:
Female: Total length 1.93 mm. Cephalothorax 0.83 mm long, 0.65 mm wide, 0.50 mm high. Abdomen 1.10 mm long, 0.70 mm wide, 0.70 mm high. Cephalothorax reddish brown with gray shades in the posterior and lateral border of the cephalic area. Eye area and clypeus with white hairs. Cephalic area slightly higher than the thoracic area. Eight eyes, homogeneous and clear, AE strongly recurved and PE straight to slightly recurved. Eye diameter (mm): AME = 0.09, PME = PLE = 0.08, ALE = 0.06. Eyes separation: AME–AME ca. one half AME diameter, AME–ALE one third AME diameter, PME–PME one half one PME diameter, PME–PLE two thirds AME diameter. LE contiguous. Clypeus height very large, twice AME diameter. Sternum reddish, wider (0.45 mm) than long (0.38 mm), posterior end truncated between coxae IV. Labium light yellow with gray tinge, distal ends light yellow, wider than long. Maxillae yellow-brown, longer than wide, apices converging. Chelicerae weak, yellow, and parallel to each other. Legs yellow with reddish band in all segments except tarsi, tibia I with two dorsal spines, tibia I d/l = 0.11. Metatarsus I/tarsus I = 1.61. Tm I = 0.40. Leg formula 1423. Pedipalp yellow, a little shorter than length of tibia I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.10	0.23	0.73	0.50	0.31	2.87
2	0.83	0.26	0.51	0.40	0.28	2.28
3	0.55	0.20	0.35	0.30	0.25	1.65
4	0.83	0.26	0.58	0.40	0.30	2.37
Pedipalp	0.23	0.10	0.13	–	0.24	0.70

Abdomen yellow with a broad median black band, posteromedian one third with a reddish tubercle, indented and curved posterior to the tubercle and the spinnerets. Anal tubercle and its anterior margins reddish. Venter with a pair of lateral longitudinal stripes enclosing the yellow-brown apical area and epigynum and the yellow posterior one half. Epigynum very simple with a tiny spherical orifice.
Etymology: Named after the reddish tubercle.
Natural history: Associated with rice root aphid, *Tetraneura nigriabdominalis* (Sasaki), in upland rice.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 20 September 1984, A.T. Barrion.
Distribution: Philippines.

Enoplognatha maysanga new species
(Fig. 288a–d)

Description:
Female: Total length 1.58 mm. Cephalothorax 0.75 mm long, 0.68 mm wide, 0.33 mm high. Abdomen 0.83 mm long, 0.85 mm wide, 0.40 mm high. Cephalothorax dark brown, cephalic area distinct from the thoracic area, its posterior part more elevated than the eye and thoracic area. Fovea brown, moderately deep, and transverse. Eight eyes all clear and homogeneous, AE strongly recurved, and PE slightly recurved. Eye diameter (mm): AME = ALE = PME = PLE = 0.08. Eye separa-

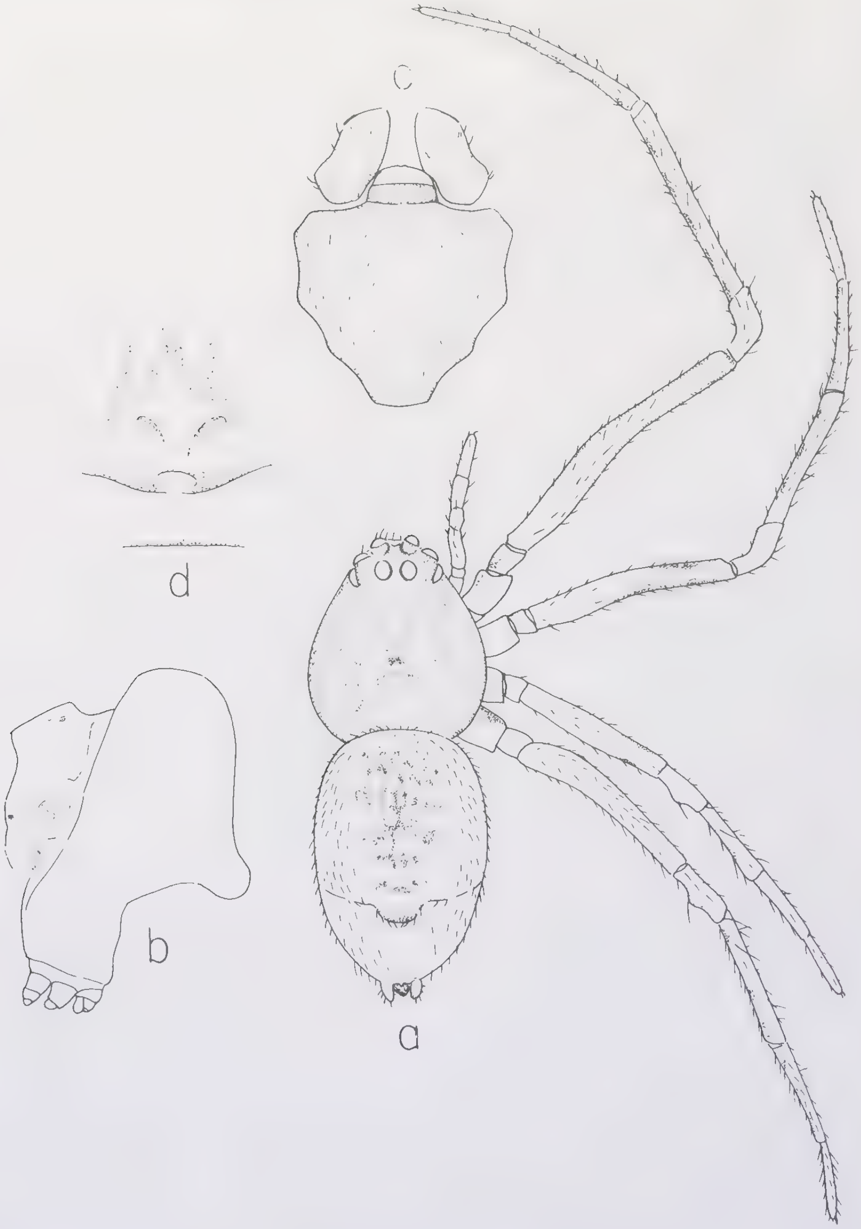


Fig. 287. Female *Enoplognatha pulatuberculata* n. sp. (a); lateral view of abdomen (b); sternum, labium, and maxillae (c); and epigynum (d).

tion: AME–AME one eighth shorter than one AME diameter, AME–ALE 0.4 times AME diameter, PE more or less equidistant from each other, as long as one half AME diameter. LE contiguous. Clypeus height small, ca. three fourths diameter. Sternum dark brown, wider than long, posterior end widely truncated between coxae IV. Labium light brown, except yellow distal margin, wider than long. Maxillae same color as labium, longer than wide, with yellow scopulae, slightly diagonal in a converging position. Chelicerae brown, moderately small, and weak, promargin with indentions before the two teeth, basal tooth bifurcated, each tooth with a long seta. Legs relatively long and slender, yellow except brown femur I, tibia I with two dorsal spines and its a/b = 0.39, metatarsus I/tarsus I = 2.18, Tm I = 0.86. Leg formula 1243. Pedipalp almost as long as metatarsus I, yellow, except brown tarsus, tibia with two trichobothria, conductor with four tubercle-like forms, radix with a median groove, median apophyses blunt at apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.35	0.30	1.30	0.85	0.39	4.19
2	0.98	0.25	0.90	0.63	0.38	3.14
3	0.55	0.18	0.38	0.40	0.28	1.79
4	0.78	0.23	0.55	0.48	0.33	2.37
Pedipalp	0.36	0.09	0.15	–	0.26	0.86

Abdomen yellowish, with a pair of median globular

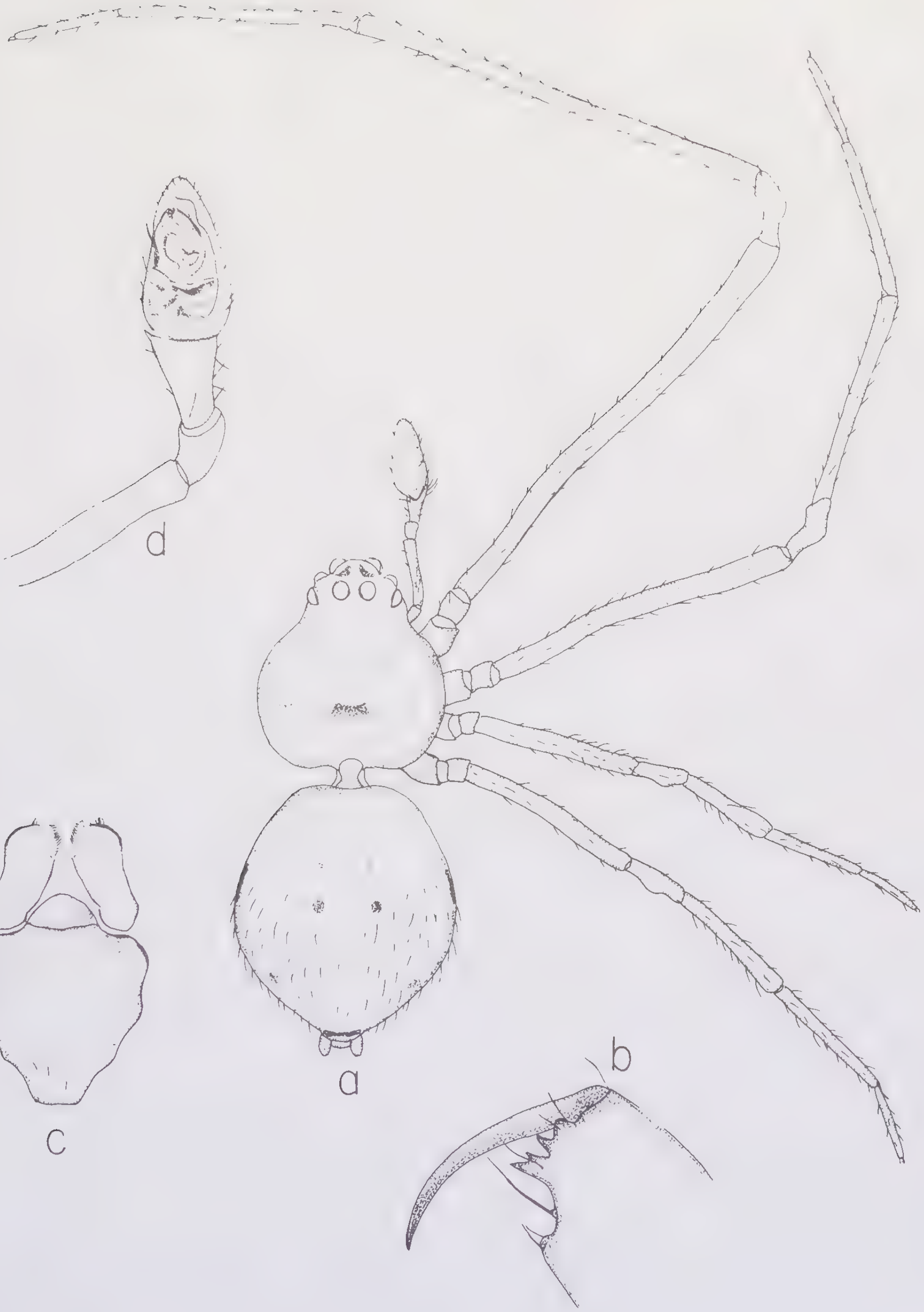


Fig. 288. Male *Enoplognatha maysanga* n. sp. (a); promarginal teeth (b); sternum, labium, and maxillae (c); and ventral view of pedipalp (d).

black spots and pale pair on its anterior and black lateral bands, anterior margin rather truncated, triangular posteriorly, dorsally clothed with fine hairs.

Etymology: Derived from the character of the abdomen, slightly triangular towards the posterior.

Natural history: A single male was collected from a pitfall trap in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 5 December 1984, A.T. Barrion.

Distribution: Philippines.

Enoplognatha apaya new species
(Fig. 289a–c)

Description:

Male: Total length 1.76 mm. Cephalothorax 0.83 mm long, 0.65 mm wide, 0.48 mm high. Abdomen 0.93 mm long, 0.98 mm wide, 0.60 mm high. Cephalothorax brown-red, with yellow shades anterior and posterior to the transverse brown fovea, cephalic area distinct from the thoracic area, posterior end subtubular anterior to the pedicel and constricted subposterolaterally. Eight

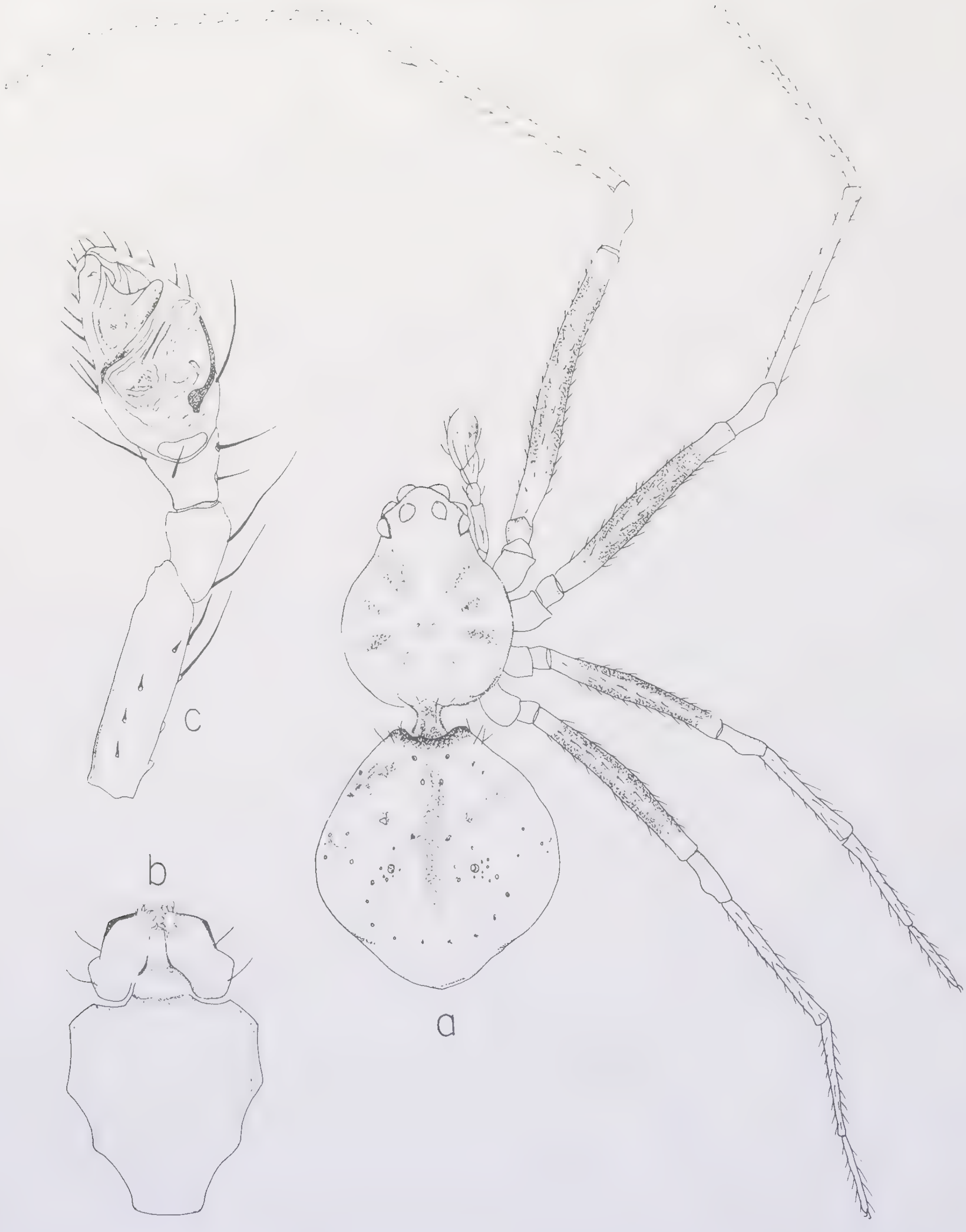


Fig. 289. Male *Enoplognatha apaya* n. sp. (a); sternum, labium, and maxillae (b); and ventral view of pedipalp (c).

eyes all clear and homogeneous, each without a black ring. Eye diameter (mm): AME = 0.09, ALE = PME = PLE = 0.08. Eye separation: AME–AME = PME–PLE approximately one half AME diameter, AME–ALE one third AME diameter, PME–PME = 0.8 AME diameter. LE contiguous, clypeus height nearly as long as one AME diameter. Sternum brownish red, as broad as long, posterior end nearly truncated and wide between coxae IV, lateral margins concave opposite each coxa. Labium wider than long and partly yellowish along distal end. Maxillae longer than wide, brownish yellow, base produced, a concave reception area along anterior margin of sternum on each side of labium. Chelicerae vertical, small, moderately stout basally, promargin with a moderately large tooth. Legs relatively long and slender, femora I to IV brownish red, becoming light yellow at distal and proximal ends, rest of segments yellow. All femora with small peg-like teeth. Tibia I d/l = 0.07 and with two dorsal spines, Tm I = 1.00, metatarsus I/tarsus I = 2.05. Leg formula 1243. Pedipalp almost as long as metatarsus IV, yellow, except brown tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.18	0.30	1.13	0.78	0.38	3.77
2	1.05	0.28	0.88	0.65	0.38	3.24
3	0.73	0.23	0.50	0.48	0.33	2.27
4	0.78	0.28	0.60	0.58	0.35	2.59
Pedipalp	0.21	0.08	0.10	–	0.20	0.59

Abdomen yellow-brown, with a gray longitudinal band radiating from cardiac area to the midhalf of abdomen, anterior median border brownish red and notched, widest medially and narrowed at both ends to slightly triangular posteriorly. Venter and laterals yellow-brown, except brownish area anterior to the epigastric furrow. Anterior spinnerets light yellow, larger than the black posterior pair.

Etymology: Derived from aphids ('apaya' in Tagalog).

Natural history: The specimen was found in association with rice root aphids, *Tetraneura nigriabdominalis* (Sasaki), in September. This is probably an aphid predator.

Material examined: PHILIPPINES: *Laguna Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 20 September 1984, A.T. Barrion.

Distribution: Philippines.

FAMILY LINYPHIIDAE BLACKWALL

(Sheet-web or Dwarf Spiders)

Linyphiidae are a large family of small-sized spiders, distinguished from other families by the form and position of paracymbium and characteristics of male palpal organ, presence of horizontal stridulating striae on the outer side of each chelicerae, and absence of serrated ventral bristles in tarsus IV. Members of the family have variable shape of carapace. The male head is usually elevated or bears protuberances, cornicles, or sulci running backwards from the posterior eyes in the subfamily Erigoninae. In Linyphiidae, lobes are absent but the head is occasionally elevated anteriorly. Eight eyes in two rows, heterogeneous, with AME darker than the rest. The clypeus is often high. Sternum heart-shaped, wide to narrow with posterior end either pointed or truncated. Labium always rebordered. Chelicerae variable in teeth pattern and development, mostly bear horizontal stridulating striae. Legs slightly short and stout to thin and long, with or without spines. Tarsi three-clawed, claw teeth variable and without auxillary claw. Metatarsi bear one dorsal trichobothrium, IV sometimes has none. Tibiae bear two or more dorsal trichobothria. Female pedipalp with or without claw. Epigynum relatively simple to complex, may bear a scape. Male pedipalp with or without apophyses in tibia, femur and patella, cymbium projected either anteriorly or posteriorly into a protuberance. Entire palp organ simple to complex, with a chitinized paracymbium set close to tibia and attached to cymbium by a membranous part. Paracymbium varies from simple crescent to horseshoe-shaped structure to a complex one armed with teeth and accessory branches.

Some erigonid females closely resemble some genera of Theridiidae – *Enoplognatha* Pavesi, 1880 and *Robertus* O. Pickard-Cambridge 1879 – possessing weak serrated bristles in tarsus IV.

These spiders largely depend upon their sheet webs to capture prey. The sheet web, which may or may not bear lines above it, is highly distinctive of the family.

Atypena superciliosa Simon, 1894 is the first linyphiid species recorded in the Philippines. *Callitrichia formosana* Oi (= *Atypena adelinae* n. sp.) and *Bathyphantes* sp. (= ?*Bathyphantes tagalogensis* n. sp.) were added to the list of Philippine linyphiids (Barrion and Litsinger 1984).

KEY TO THE GENERA AND SPECIES OF SHEET-WEB SPIDERS

1 Tibia IV bears two dorsal spines; carapace with a broad yellow eight- or nine-sided median band; abdomen globose with five dorsal black spots (Fig. 290a); epigynum simple with a pair of spherical spermathecae, its ducts converge posteriorly (Fig. 290b). ...... ?*Bathyphantes tagalogensis* n. sp. (Fig. 290ab)

– Tibia IV bears one dorsal spine. 2

2 Lateral margins of carapace and front of chelicerae toothless; abdomen with two rows of black longitudinal bands or paired spots in two rows. 3

– Lateral margins of carapace and front of chelicerae armed with teeth. 6

3 Male *Atypena*. 4

– Female *Atypena*. 5

4 Clypeus height twice AME diameter (Fig. 291ab); PLE = ALE; MOQ 1.75 times wider behind than in front, length twice anterior width; tibia I length/carapace length = 0.79; Tm I = 0.81; terminal apophysis broad and scoop-like (Fig. 291c). .... *Atypena adelinae* n. sp. (Fig. 291a–c)

– Clypeus height 2.6 times AME diameter (Fig. 293ab); ALE slightly longer than PLE diameter; MOQ 1.86 times wider behind than in front, length 2.36 times

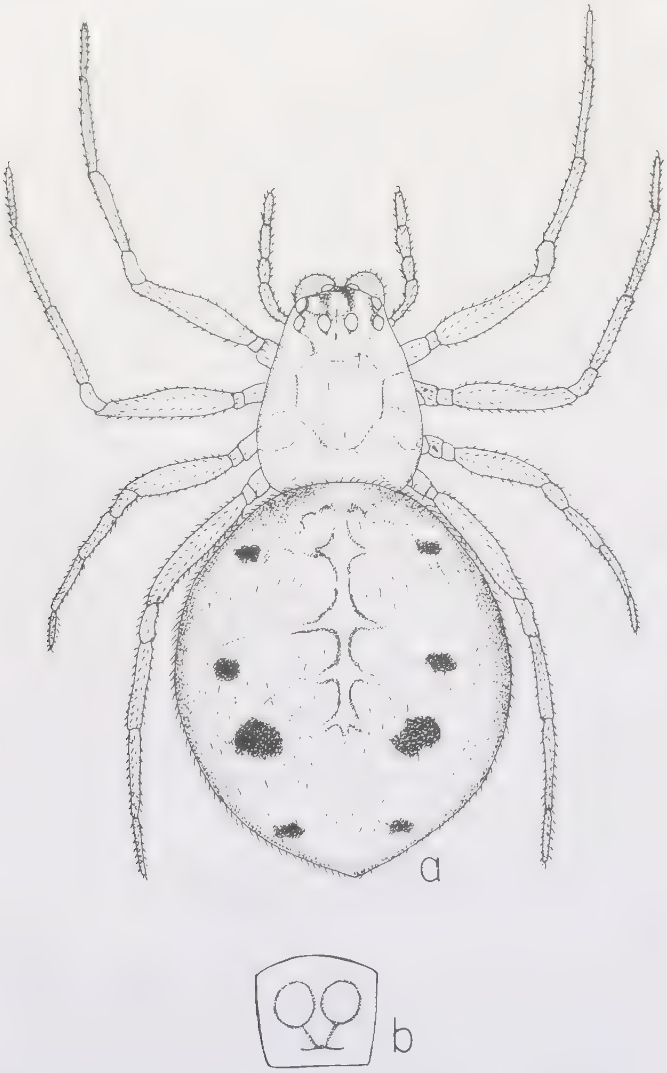


Fig. 290. Female *?Bathyphantes tagalogensis* n. sp. (a); and uncleared epigynum (b).

anterior width; tibia I length/carapace length = 0.75; Tm I = 0.82; terminal apophysis shoe-like (Fig. 293c). .... *Atypena thailandica* n. sp. (Fig. 293a–c)

5 Abdomen with four pairs of black spots, often continuous as a pair of broad gray to black longitudinal bands interrupted above midlength and subposteriorly (Fig. 292a); ALE longer than equally long PME and PLE; tibia I length/carapace length = 0.87; Tm I = 0.82; metatarsus I/tarsus I = 1.55; tibia IV longer than femur II. .... *Atypena adelinae* n. sp. (Fig. 292a–c)

– Abdomen with five pairs of distinctly separated spots in two parallel longitudinal rows (Fig. 294a); PME longer than ALE diameter; tibia I length/carapace length = 0.71; Tm I = 0.86; metatarsus I/tarsus I = 1.51; tibia IV as long as femur II. .... *Atypena thailandica* n. sp. (Fig. 294a–c)

6 Tm I = 0.51; tibia I length/carapace length = 0.73 in male; abdomen with a middorsal hump projected posteriorly (Fig. 295ab). .... *Erigone malvari* n. sp. (Fig. 295a–i)

– Tm I = 0.31 in male and 0.32 in female; tibia I length/carapace length = 0.80 in male and 0.74 in female; abdomen in both sexes without dorsal hump (Fig. 296abh). .... *Erigone bifurca* Locket (Figs 296a–h, 297ab)

Genus *Bathyphantes* Menge

Bathyphantes Menge, 1866. Schr. Naturf. Ges. Danzig, N.F. 1: 11.

This genus closely resembles *Lepthyphantes* Menge in appearance. *Bathyphantes* Menge, however, has black markings in abdominal dorsum, long and thin legs, femora I–III each with a small dorsal spine, all tibiae with two dorsal spines and one each of retrolateral and prolateral in tibiae I and II, metatarsi spineless and IV without a trichobothrium, Tm I = 0.20–0.25; palpal organ of male variable; female epigynum often elongated with a scape.

?Bathyphantes tagalogensis new species
(Fig. 290ab)

Bathyphantes sp. Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24.

Description:
Female: Total length 2.05 mm. Cephalothorax 0.85 mm long, 0.60 mm wide, 0.48 mm high. Abdomen 1.20 mm long, 0.80 mm wide, 1.00 mm high. Cephalothorax yellowish brown with an eight- or nine-sided yellow median band, base of band with four hairs and middle portion with six. Cephalic region moderately elevated, with AE row recurved and PE row straight. Eye diameter (mm): ALE = 0.08, AME = 0.07, PME = 0.06, PLE = 0.05. Eye separation (mm): AME–AME = 0.08, AME–ALE = PME–PME = PME–PLE = 0.05. MOQ square. Clypeus height slightly larger than one AME diameter, as long as AME separation. Sternum wider than long, strongly truncate posteriorly between coxae IV. Labium similar in color to sternum and maxillae. Apico-inner margins of maxillae converging. Chelicerae fused in inner basal one third, separated basally and diverging apically. Promargin bears five long thin spines and retromargin with three short blunt teeth. Legs uniformly yellow, spineless except tibiae I, II, IV with two dorsal spines, III with one, and patellae each with one. Tibia l/d in I = 6.00, II = 4.94, III = 4.22, and

IV = 6.75. Tibia II with four dorsal trichobothria in longitudinal row. Tm I = 0.30, II = 0.57, III = 0.47, and IV = 0.44. Metatarsus I/tarsus I = 1.40. Metatarsus as long as tibia in legs I, II, and III. Leg formula 4123. Pedipalp yellow, shorter than femur IV but longer than any of femora I–III.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.75	0.28	0.63	0.63	0.45	2.74
2	0.78	0.23	0.55	0.55	0.40	2.51
3	0.68	0.25	0.50	0.50	0.34	2.27
4	0.95	0.26	0.68	0.65	0.48	3.02
Pedipalp	0.25	0.13	0.15	0.28	0.81	

Abdomen globose, yellow, dorsum with five median black spots. Sternum yellow, bases distinctly separated. Epigynum a square-like plate with a pair of spherical spermathecae, ducts fused posteriorly in a thin transverse stripe.

Etymology: Named after the Tagalog people of the Southern Tagalog Region where both type localities are.

Natural history: All the specimens were D-Vac collected from lowland irrigated rice at maximum tillering in January to April.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Victoria, Masapang Vill., holotype female, 15 January 1980, G. Aquino; *Palawan Is.*, Palawan Prov., Aborlan, one female paratype, 24 April 1979, A.T. Barrion.

Distribution: Philippines.

Remarks: Fresh specimens have four pairs of black spots in the abdominal dorsum, third pair from the anterior the largest. Body length ranged from 2.05 to 2.56 mm.

The species is placed provisionally in *Bathyphantes*. Some characters, such Tm I value and one dorsal spine in tibia III, do not fit in the genus.

Genus *Atypena* Simon

Atypena Simon, 1894. Hist. Nat. Araign. 1(3): 668.

Atypena Simon is a small genus of linyphiid spiders comprising seven species distributed in the Ethiopian and Oriental regions of the world. Members of the genus are separated from other genera by the following characters of females – cephalothorax slightly high in the cephalic region and broadest between coxae II and III, LE contiguous, AE row strong recurved and PE row straight, PME largest and AME smallest, MOQ usually wider behind than in front, high clypeus, and simple epigynum. On the other hand, males have elevated head forming a transverse lobe bearing the PME, pit present in PME and PLE, area between PME and AME hairy, palpal organ complex with embolic portion rather wide apically. Tibiae III and IV of both sexes bear a single spine each.

Jocque (1983) synonymized *Callitrichia* Fage, 1936 under *Atypena*, in contrast to the earlier work of Wunderlich (1978), who placed the former genus as a junior synonym of *Oedothorax* Bertkau, 1883. We followed the work of Jocque (1983) in this book.

Atypena superciliosa Simon occurs in the Philippines.

Atypena adelinae new species
(Figs 291a–c, 292a–c)

Callitrichia formosana Oi, in Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24. n. syn.

Description:

Male (Fig. 291a–c): Total length 1.68 mm. Cephalothorax 0.75 mm long, 0.60 mm wide, 0.80 mm high. Abdomen 0.93 mm long, 0.73 mm wide, 0.70 mm high. Cephalothorax pale yellow, except grayish brown cephalic area tapering to a point beyond black fovea and thoracic region with a pale gray M-band posterior to fovea. Tubercle present in the cephalic region, entire portion yellow, except for a pair of median parallel gray stripes in posterior one half with a hair in between, contains PME projected posteriorly in the dorsoventrolateral part. Anterior margin of tubercle cleft and posterior margin concave viewed dorsally, frontal face of tubercle with a mat of transversely set black hairs converging towards each other and lateral pit-like scar between PME and PLE, closer to PLE than to PME. Eight eyes in two rows, strongly recurved AE row slightly shorter than procurved to straight PE row. Eye diameter (mm): PME = 0.08, PLE = ALE = 0.06, AME = 0.05. Eye separation (mm): AME–AME = 0.03, AME–ALE = 0.05, PME–PME = 0.14, PME–PLE = 0.15. LE contiguous. MOQ 1.75 times wider behind than in front, length twice anterior width. Clypeus height twice AME diameter. Sternum grayish yellow, slightly longer than wide, and posterior end extended beyond coxae, midanterior entire to the labium with a yellow apical one half. Maxillae yellow-brown with grayish scopulae, apices converging. Chelicerae pale orange-yellow to red, vertical, and bearing two retromarginal and four promarginal teeth. Legs yellowish towards tarsi and orange-yellow to pale orange-red in apical one half of femur, entire patellae and tibiae. Tibia l/d at I = 7.38, II = 5.60, III = 4.30, IV = 6.19. Tibiae I and II each with two dorsal spines and one each in III and IV. Tm I = 0.81, II = 0.86, III = 0.80, IV = 0.84. Metatarsus I/tarsus I = 1.39. Base of median claw of tarsus slightly rounded, less projected forward, tip of median claw long and very sharply pointed. Leg formula 4123. Pedipalp as long as combined length of patella and tibia of leg II, bears a strongly sclerotized, shortly curved lateral apophysis pointed at tip in tibia, median apophysis less sclerotized, rounded apically and with a small hump between two apophyses. Paracymbium with a strong and inwardly

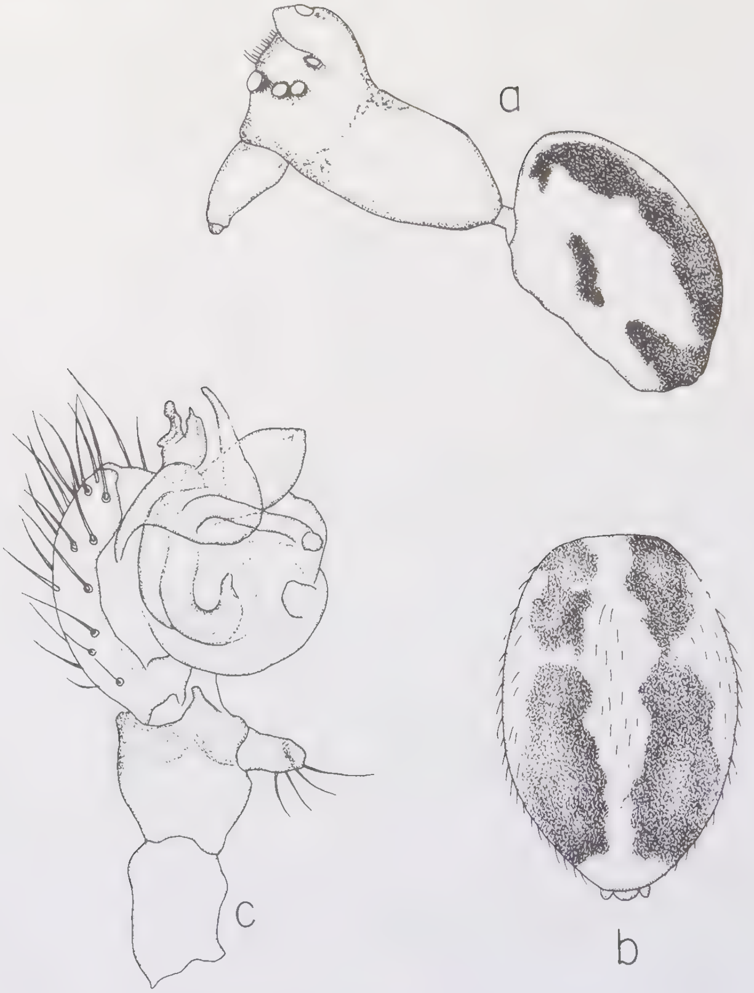


Fig. 291. Male *Atypena adelinae* n. sp. (a); abdominal dorsum (b); and pedipalp (c).

curved apex. Terminal apophysis broad and scoop-like, lamella pointed at tip, angulate at base. Embolic division with two apical processes, apex of one rounded in retrolateral view and with a sharp tooth in ventrolateral view, the other indented or grooved apically. Basolateral of cymbium facing paracymbium bears nine setae.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.64	0.21	0.59	0.53	0.38	2.35
2	0.62	0.20	0.56	0.53	0.38	2.29
3	0.53	0.20	0.43	0.46	0.31	1.93
4	0.65	0.20	0.65	0.63	0.35	2.48
Pedipalp	0.29	0.13	0.15	-	0.19	0.76

Abdomen ovoid, yellowish white, with a pair of black to gray longitudinal broad bands interrupted above midlength, dorsal band C-shaped in lateral view and highlighted by the lateral band near base of spinnerets. Spinnerets pale yellow-orange.

Female (Fig. 292a–c): Total length 2.80 mm. Cephalothorax 0.90 mm long, 0.70 mm wide, 0.50 mm high. Abdomen 1.90 mm long, 1.50 mm wide, 1.30 mm high. Cephalothorax pale yellowish brown with grayish tinge, becoming darker in the cephalic area, black eye margins and fovea, and gray in the lateral margins. Cephalic area higher than the thoracic region, moderately deep anterior to fovea as seen in lateral view. Eight eyes in two rows, AE row strongly recurved and PE row straight to slightly procurved. Eye diameter (mm): ALE = 0.08, PLE = PME = 0.07, AME = 0.05. Eye separation (mm): AME–AME = 0.03, AME–ALE = 0.04, PME–PME = PME–PLE. LE contiguous. MOQ 1.3 times wider behind than in front, length 1.2 times longer than anterior width (0.15 mm). Clypeus height twice AME diameter. Sternum grayish yellow, slightly longer than wide, extended between coxae IV, entire to labium with yellow apical margin. Maxillae pale orange-yellow, similar to chelicerae, apices converging. Chelicerae vertical, promargin with four or five teeth and two or three in the retromargin. Legs yellow in the basal one half of tarsi and femur, rest pale orange-yellow. All patellae subequal and all tibiae with one dorsal spine each, l/d at I = 7.80, II = 7.50, III = 5.90, and IV = 8.40. Tm I = 0.82, II = 0.86, III = IV = 0.83.

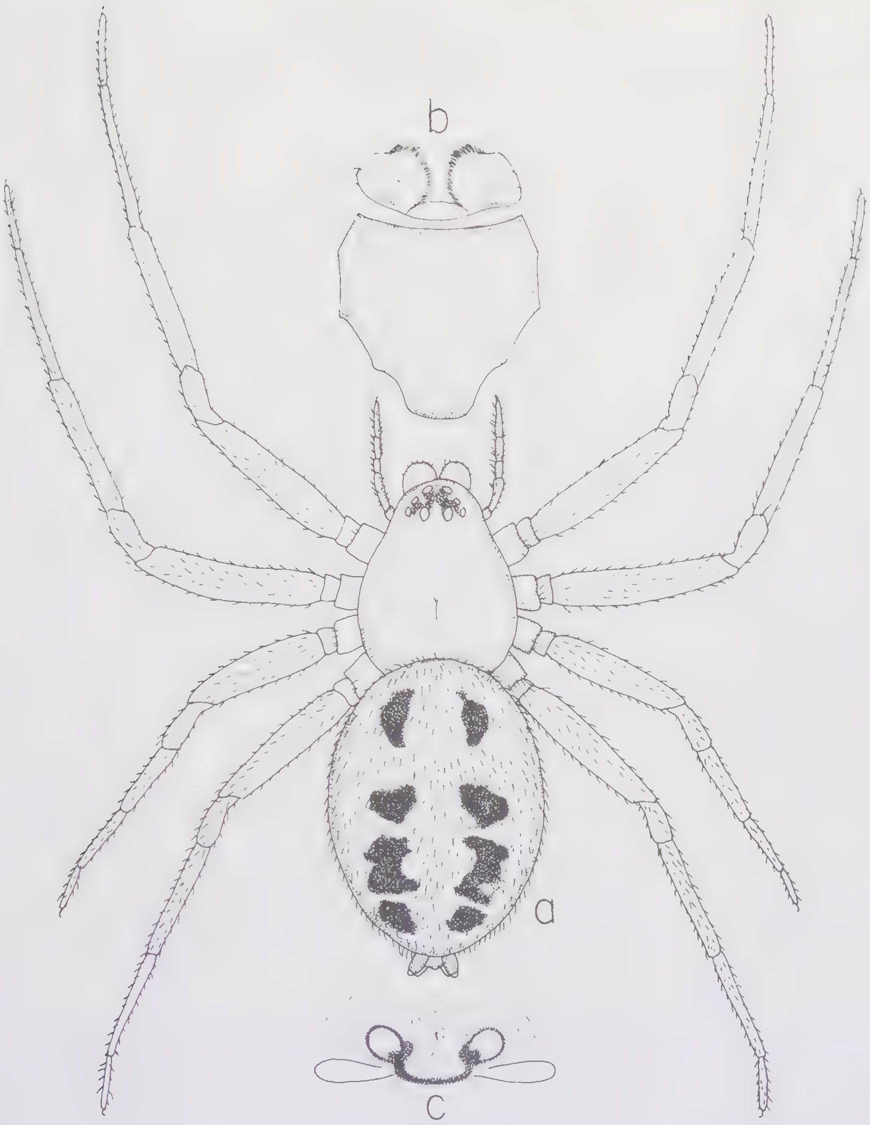


Fig. 292. Female *Atypena adelinae* n. sp. (a); sternum (b); and ventral view of epigynum (c).

Metatarsus I/tarsus I = 1.55. Base of median claw of tarsus as in male. Leg formula 4123. Pedipalp yellow, longer than any of femora I–IV, almost as long as combined length of patella II and tibia II.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.85	0.25	0.78	0.68	0.44	3.00
2	0.78	0.25	0.75	0.66	0.41	2.85
3	0.69	0.25	0.59	0.60	0.35	2.48
4	0.88	0.25	0.84	0.81	0.43	3.21
Pedipalp	0.29	0.12	0.20	–	0.38	0.99

Abdomen whitish yellow, finely haired, globose to ovoid, with four pairs arranged in two longitudinal rows of large oval to triangular or elongate black to gray spots. Venter pale whitish yellow with gray tinge along the vetrolaterals near the spinnerets. Epigynum with a pair of diverging spermathecae, connected to each other by the posterior epigynal margin.

Etymology: Named after my wife, Adelina.

Natural history: All the specimens were collected by D-Vac machine from ricefields year round.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, holotype male, 22 November 1980, A.T. Barrion; paratypes, 12 females and ten males, same data as holotype, Liliw, Tuybaana Vill., ten females and ten males, 20 April 1980, E. Ferrer; Batangas Prov., Tanauan, Cale Vill., ten females, five males and 12 spiderlings, 22 July 1978, A.T. Barrion; Sto. Tomas, San Rafael Vill., eight females, five males and six spiderlings, 18 August 1981, R. Apostol and M. Perez.

Distribution: Philippines.

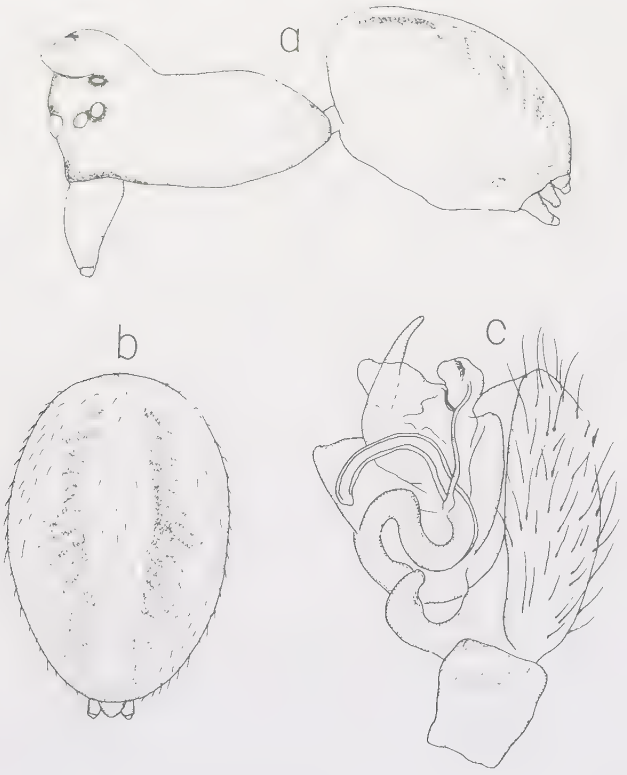


Fig. 293. Male *Atypena thailandica* n. sp. (a); abdominal dorsum (b); and pedipalp (c).

Atypena thailandica new species
(Figs 293a–c, 294a–c)

Description:

Male (Fig. 293a–c): Total length 1.65 mm. Cephalothorax 0.75 mm long, 0.60 mm wide, 0.70 mm high. Abdomen 0.90 mm long, 0.70 mm wide, 0.70 mm high. Cephalothorax yellowish brown to light reddish brown, with black eye margins, longer than wide, cephalic hump subrectangular with straight anterior margin and rounded posterior in top view carrying PME, dense mat of yellow hairs present between PME and AME frontally, and a brownish pit-like scar between PME and PLE laterally. Eight eyes in two rows, strongly recurved AE row slightly shorter than the straight to procurved PE row. Eye diameter (mm): PME = 0.08, ALE = 0.07, PLE = 0.06, AME = 0.05, PME almost on the dorsoanterolateral corner of the tubercle. Eye separation (mm): AME–AME = AME–ALE = 0.05, PME–PME = 0.14, PME–PLE = 0.13. MOQ 1.86 times wider behind than in front, length 2.36 times anterior width (0.14 mm). Clypeus height 2.6 times AME diameter. Sternum grayish yellow, 1.28 times wider than long (0.45 : 0.35 mm). Labium and sternum entire and similar in color, except yellow apical part. Maxillae yellow with pale gray scopulae, apices converging. Chelicerae vertical, separated basally as seen in front, diverging apically. Promargin with five teeth and retromargin two teeth. Legs uniformly yellow, with fine yellow hairs and few spines. Tm I = 0.82, II = 0.81, III = 0.86, and IV = 0.90. Tibia l/d at I = 5.77, II = 5.56, III = 6.11, and IV = 7.38. Metatarsus I/tarsus I = 1.39. Base of median claw of tarsus knob-like. Leg formula 4123. Pedipalp longer than combined length of any femur and patella, yellow except brown palpal organ. Apex of pedipalp's tibia with two processes, lateral one reduced to a small tooth and the inner one sclerotized, flat and large with a rounded apex. Paracymbium longer than wide, subrectangular with a semiconcave distal end and curved apex much wider than base. Lamella slender, swollen at midhalf and concave subbasally, sharply pointed and higher than shoe-like terminal apophysis with a blunt end. Embolic division with two sclerotized processes and a semimembranous structure adjacent to them, with a thin spur and swollen base, embolic base a large tooth-like process. Cymbium rounded apically with ten setae basolaterally facing paracymbium.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.63	0.20	0.56	0.50	0.36	2.25
2	0.60	0.19	0.55	0.50	0.34	2.18
3	0.50	0.20	0.46	0.43	0.30	1.89
4	0.64	0.23	0.59	0.58	0.35	2.39
Pedipalp	0.33	0.15	0.11	–	0.30	0.89

Abdomen ovate, yellow, and clothed with short fine brown hairs, dorsum with five pairs of gray to black spots in two longitudinal rows, elongate apicalmost pair longitudinal and parallel to each other, the rest transverse.

Female (Fig. 294a–c): Total length 2.35 mm. Cephalothorax 0.85 mm long, 0.70 mm wide, 0.55 mm high. Abdomen 1.50 mm long, 1.40 mm wide, 1.40 mm high. Cephalothorax yellow, except black eye rings and pale gray lateral margins, cephalic distinctly higher than thoracic region, with short pale gray fovea. Eight eyes in two rows, AE strongly recurved and PE row straight to slightly procurved. Eye diameter (mm): PME = PLE = 0.08, ALE = 0.07, AME = 0.05. Eye separation (mm): AME–AME = ALE–AME = 0.03, about 0.6 AME diameter, PME–PME = 0.05, PME–PLE = 0.04. LE contiguous. MOQ 1.26 times wider behind than in front; length 1.2 times more than anterior width (0.15 mm). Clypeus height twice AME diameter. Sternum, labium, and maxillae as in male, except the very yellow inner lateral margin of maxillae. Chelicerae vertical, stridulating organ absent, promargin with five teeth and three in the retromargin. Legs uniformly yellow, tibiae I and II each with two dorsal spines and one each in tibiae III and IV. Tibia III as long as metatarsus III. Tibia l/d at I = 6.00, II = 5.50, III = 4.50, IV = 4.62. Tm I = 0.86, II = 0.85, III = 0.79, IV = 0.85. Metatarsus I/tarsus I = 1.51. Base of median claw of tarsus knob-like or protruded forward. Leg formula 4123. Pedipalp longer than all of the femora.

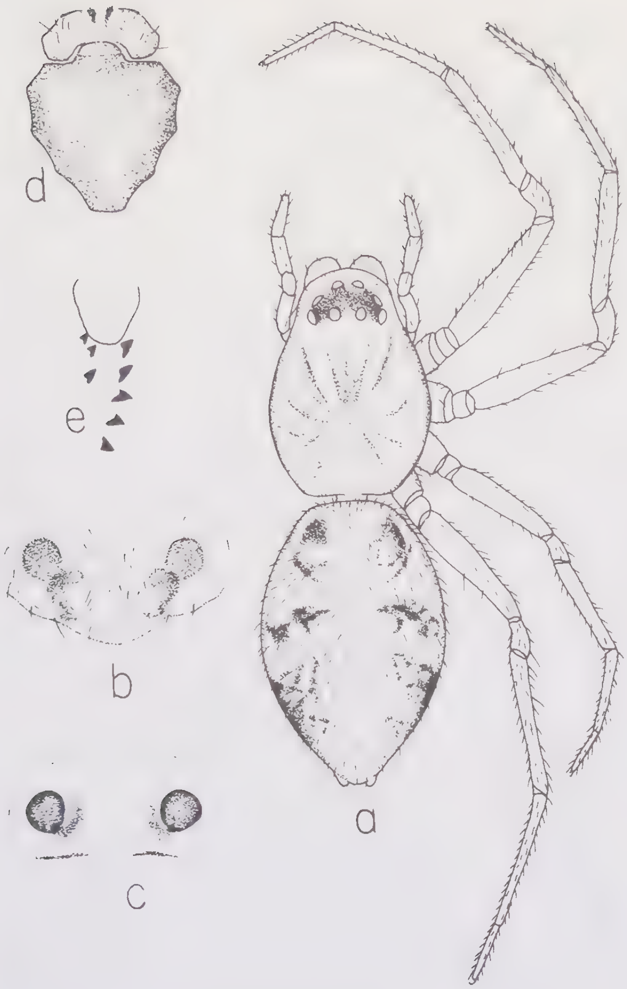


Fig. 294. Female *Atypena thailandica* n. sp. (a); and dorsal (b) and ventral (c) views of epigynum; sternum, labium, and maxillae (d); and cheliceral teeth (e).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.65	0.23	0.60	0.53	0.35	2.36
2	0.63	0.21	0.55	0.46	0.35	2.20
3	0.53	0.18	0.45	0.45	0.28	1.89
4	0.69	0.23	0.63	0.60	0.35	2.50
Pedipalp	0.25	0.11	0.14	–	0.28	0.78

Abdomen yellow, globular, and bears five pairs of black to gray spots dorsally, arranged in two longitudinal rows. Epigynum bears a broad posteriorly truncate median process, its length about twice diameter of spermatheca, in dorsal view anterior margins of median process almost converging, forming inside a series of scape-like striae. Ventrally median process truncate posteriorly, with angulate lateral epigynal margins terminating in a twisted orifice. Spermathecae globular, borne on the single coiled duct, and separated from each other by almost the length of median process.

Etymology: Named after type locality.
Natural history: All the specimens were collected by aspirator in deep-water rice in July.
Material examined: THAILAND: Prachinburi Prov., Prachinburi Rice Research Station, holotype male, 26 July 1989, A.T. Barrion; three females and two males paratype, same data as holotype.
Distribution: Thailand.

Genus *Erigone* Audouin

Erigone Audouin, 1826. Savigny's Descr. de l'Egypte, Arachn. 1: 115.

Members of genus are readily separated from the other members of the family by the presence of teeth in the margin of carapace and anterior of chelicerae; male head elevated with no definite lobe; male maxillae with warts; metatarsus IV without trichobothrium; Tm I = 0.42–0.50; tibiae I–III with two dorsal spines and one in tibia IV; position of tibia IV spine 0.26–0.30; metatarsi longer than tarsi, metatarsus I/tarsus I = 1.3–1.4, metatarsus IV/tarsus IV = 1.6; patella of male pedipalp bears a terminal ventral process, and tip of tibia deeply excavated, producing a deep pit; embolic division consists of a more or less elongate central body armed with three teeth; female epigynum simple, usually with a procurved rebordered posterior edge.

Erigone Audouin is a moderately large genus of small-sized spiders, less than 3.00 mm long. It is distributed worldwide and comprises ca. 53 species.

Erigone malvari new species
(Fig. 295a–i)

Description:
Male: Total length 1.65 mm. Cephalothorax 0.80 mm long, 0.55 mm wide, 0.50 mm high. Abdomen 0.85 mm long, 0.60 mm wide, 0.60 mm high. Very similar to *E. bifurca* except for teeth along margins of carapace. Eight eyes in two rows, AE recurved and PE straight. Eye diameter (mm): ALE = PME = 0.06, PLE = AME = 0.05. Eye separation (mm): AME–AME = 0.01, AME–ALE = 0.03, PME–PME = PME–PLE = 0.04. MOQ wider behind than front, length greater than anterior width. Clypeus height 3.5 times AME diameter. Sternum with very few hairs medially, labium and maxillae similar to *E. bifurca*. Tm I = 0.51. Metatarsus I/tarsus I = 1.29. Leg length 1423 (although tibia to tarsus II are missing). Pedipalp almost as in *E. bifurca* except for subtriangular subtegulum, longitudinal scars in the dens medius, and sharply pointed membranous process near median apophysis. Palpal tibia bifid at tip, intermediate apophysis moderately tapered apically, and base of three apophyses with five long hairs and a trichobothrium and a long hair in a transverse row.

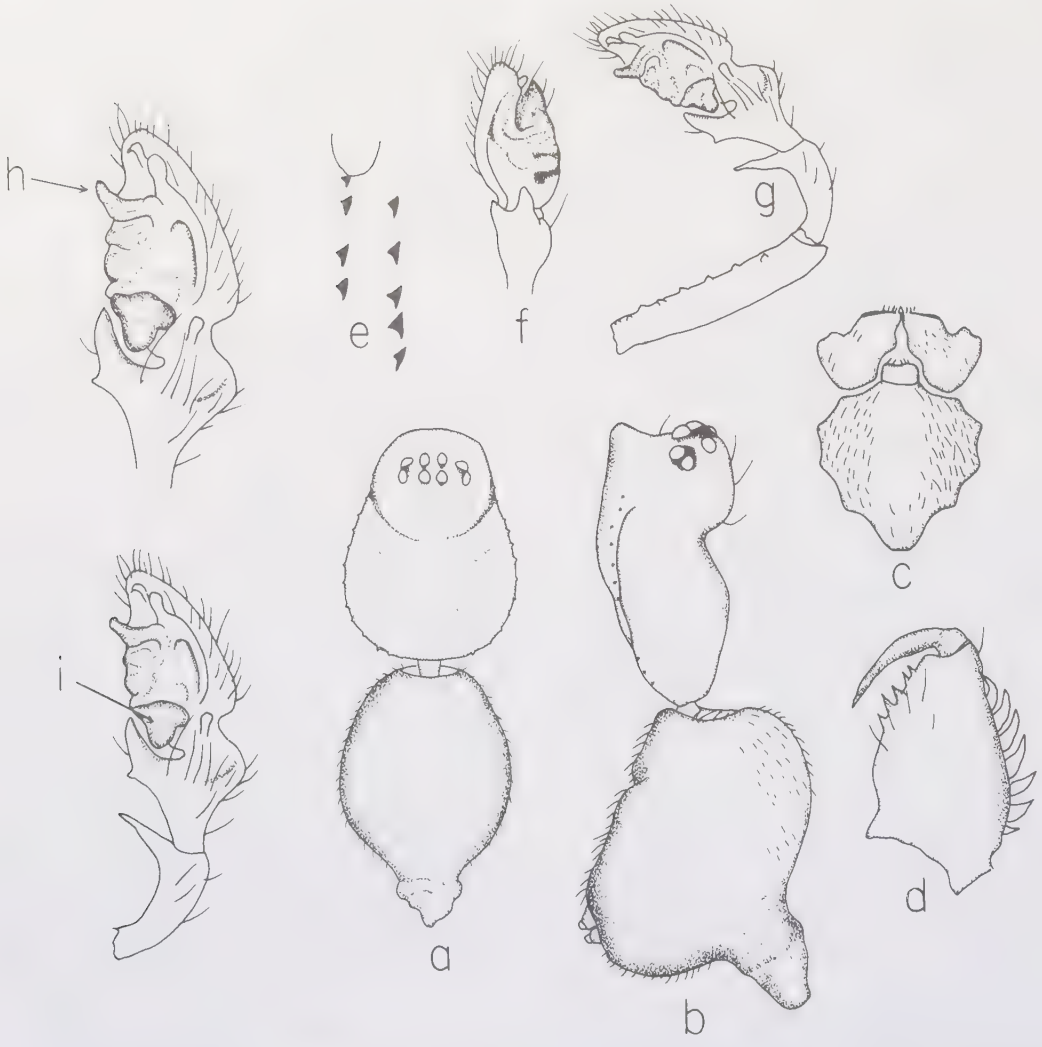


Fig. 295. Male *Erigone malvari* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); chelicera (d); cheliceral teeth (e); ventral (f) and retrolateral (g) views of palpal organ; dens medius (h); and subtegulum (i).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.64	0.18	0.58	0.45	0.35	2.20
2	0.54	0.18	–	–	–	–
3	0.38	0.19	0.34	0.31	0.28	1.50
4	0.50	0.19	0.54	0.46	0.33	2.02
Pedipalp	0.55	0.25	0.25	–	0.35	1.40

Abdomen as wide as high, grayish brown, with a middorsal hump projected posteriorly. Venter gray with yellow patches. Spinnerets pale yellow with pale gray margins around.

Etymology: Named after Miguel Malvar.

Natural history: The single specimen was vial-tapped from newly harvested ricefield in February.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Koronadal, Morales Vill., holotype male, 12 February 1989, J. Siazon.

Distribution: Philippines.

Erigone bifurca Locket
(Figs 296a–h, 297ab)

Erigone bifurca Locket, 1982. Bull. Brit. Arachnol. Soc. 5(8): 366.

Redescription:

Male (Fig. 296a–h): Total length 1.35 mm. Cephalothorax 0.75 mm long, 0.55 mm wide, 0.50 mm high. Abdomen 0.60 mm long, 0.50 mm wide, 0.40 mm high. Cephalothorax uniformly pale reddish brown, ocular

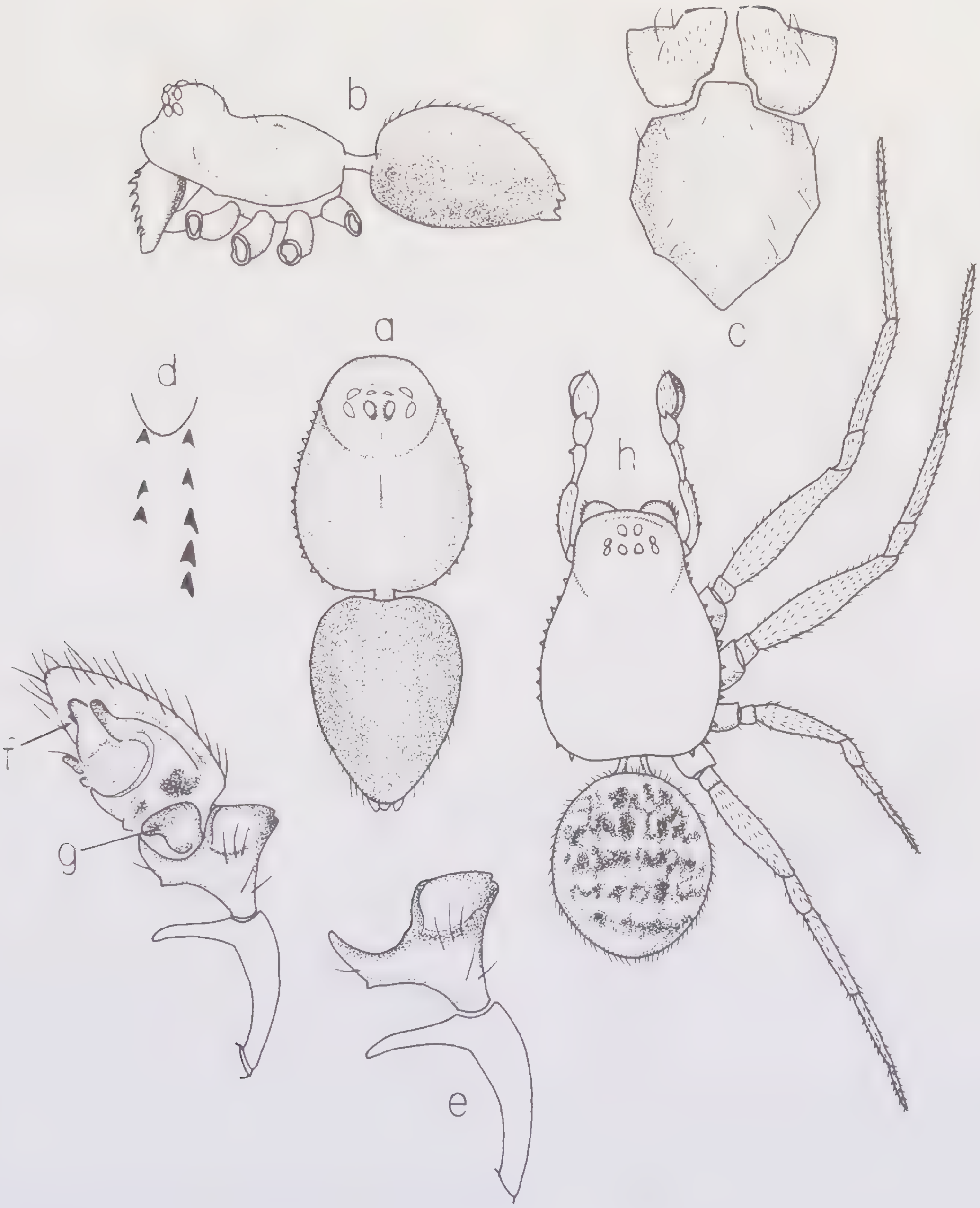


Fig. 296. Male *Erigone bifurca* Locket with ovate abdomen, dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); cheliceral teeth (d); patella and tibial processes of pedipalp (e); lamella and terminal apophysis (f) and subtegulum (g); and male with globose abdomen (h).

area elevated and half-circular in top view, entire margins lined with teeth. Eight eyes in two opposite rows, AE slightly recurved and PE row slightly procurved. Eye diameter (mm): ALE = 0.06, PME = PLE = 0.05, AME = 0.04. Eye separation (mm): AME–AME = ALE–AME = 0.03, PME–PME = PLE–PME = 0.04. MOQ wider behind (0.14 mm) than in front (0.10 mm); length slightly less than posterior width (0.13 mm). Clypeus height wide, almost six times AME diameter. Sternum grayish yellow, wider than long. Maxillae yellowish brown with a subquadrate inner apical one half. Chelicerae reddish brown with seven frontal spurs, promargin bears five teeth and three in the retromargin. Legs long and yellowish, femora

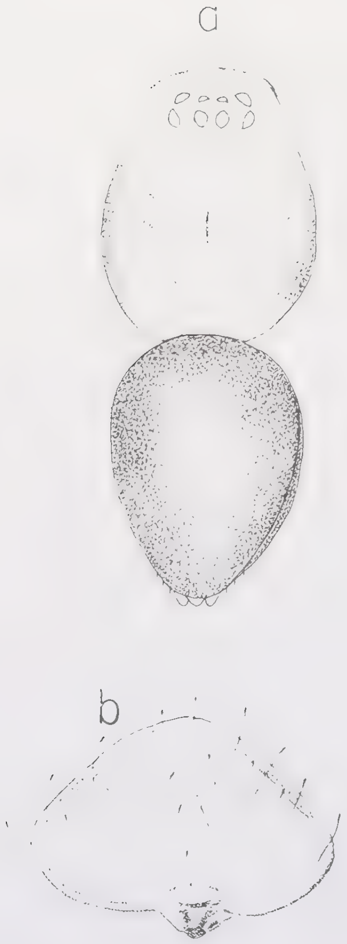


Fig. 297. Female *Erigone bifurca* Locket (a); and dorsal view of epigynum (b).

roughened by peg-like teeth. Tm I = 0.30. Metatarsus I/tarsus I = 1.29. Leg formula 14=23 or 1423. Pedipalp more than twice longer than femur I, tip of tibia bifid, lateral apophysis apically membranous, suprategular apophysis with a membranous process at tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.63	0.20	0.60	0.45	0.35	2.23
2	0.53	0.19	0.50	0.40	0.34	1.96
3	0.40	0.18	0.36	0.35	0.28	1.57
4	0.50	0.19	0.53	0.44	0.30	1.96
Pedipalp	0.55	0.28	0.20	–	0.28	1.31

Abdomen globular, uniformly gray. Spinnerets grayish yellow, anterior pair closed basally.

Female (Fig. 297ab): Total length 1.56 mm. Similar to male in color. Cephalothorax 0.65 mm long, 0.53 mm wide, 0.45 mm high. Abdomen 0.91 mm long, 0.68 mm wide, 0.68 mm high. Eight eyes in two rows, AE row slightly recurved and PE row straight. Eye diameter (mm): ALE = 0.06, PME = PLE = 0.05, AME = 0.04. Eye separation (mm): AME–AME = AME–ALE = PME–PLE = 0.03, PME–PME = 0.04. MOQ as in male. Clypeus height twice AME diameter. Chelicerae as in male except absence of frontal peg-like spines. Legs yellowish, femora I and II without peg-like teeth and spines. Tm I = 0.32. Metatarsus I/tarsus I = 1.16. Leg formula 1423.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.53	0.19	0.48	0.39	0.30	1.89
2	0.53	0.19	0.39	0.35	0.30	1.76
3	0.40	0.15	0.35	0.30	0.26	1.46
4	0.52	0.17	0.50	0.35	0.24	1.78
Pedipalp	0.24	0.10	0.15	–	0.25	0.74

Abdomen ovoid and uniformly gray except yellow spinnerets. Epigynum with a small scape-like median process.

Natural history: All collected from irrigated and rainfed wetland ricefields in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., four males and two females, 27 August 1981, A.T. Barrion.

Distribution: Malaysia and Philippines (new record).

FAMILY THERIDIOSOMATIDAE VELLARD

(Ray Spiders)

These are small spiders (1.6–2.7 mm) with eyes dissimilar in color, the anterior median eyes alone being dark. The lateral condyle or boss of the chelicerae is absent. The tarsi of the fourth pair of legs are clothed beneath with numerous bristles. The middle spinnerets are situated between the hind pair, the four forming a straight transverse line; the posterior spinnerets are longer than the anterior ones; the colulus is distinct. The body color varies from a dirty yellow to gray, and the abdomen is marked with silvery spots.

The web is different from the usual orb. The radii, instead of converging at one center, are united in groups of three or four, each group being connected with the center by a single thread. The web is drawn into the shape of a cone by a thread extending from the center to a nearby twig and held tightly by the spider, who releases it suddenly to aid in entangling any prey that might impact on the snare.

They are found in dark and damp habitats such as inside a group of several rice tillers, creek beds, and wet moss. The egg sacs are almost spherical, brownish yellow, papery, fastened to twigs, and suspended by a thread or a cord, in or near the web. *Wendilgarda* egg sacs, however, are different and appear to have four or five longitudinal ridges.

Coddington (1986) reviewed and revised the genera under the family. Five new genera – *Plato*, *Chthonos*,

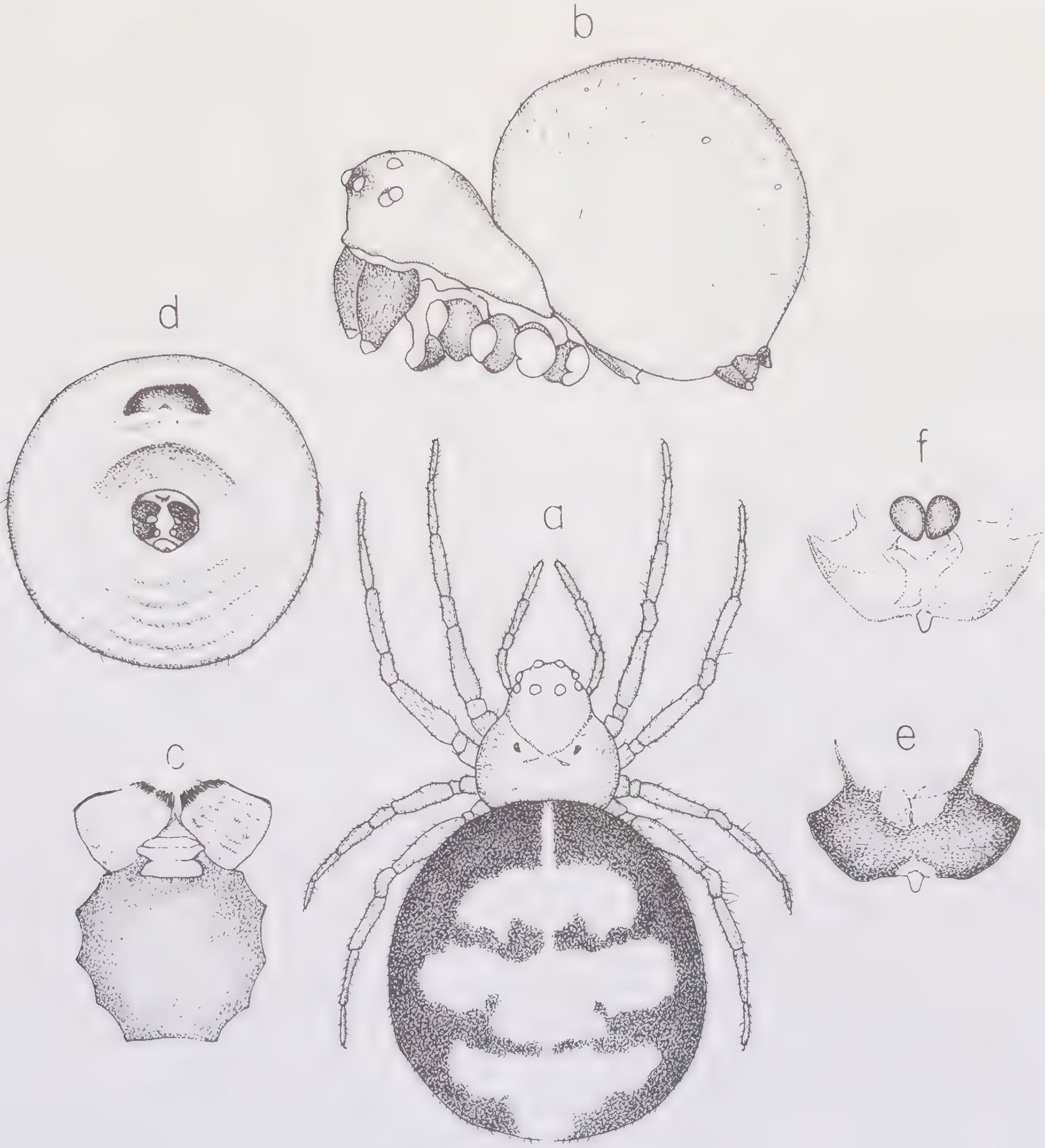


Fig. 298. Female *Wendilgarda liliwensis* n. sp., dorsal (a) and lateral (b) habitus; sternum, labium, and maxillae (c); venter of abdomen (d); and dorsal (e) and ventral (f) views of epigynum.

Naatlo, *Baalzebub*, and *Epilineutes* – were added to the family and two new subfamilies – Platoninae and Ogulniinae – were also erected.

Genus *Wendilgarda* Keyserling

Wendilgarda Keyserling, 1886. Die Spinnen Amer. Theridiidae 2(2): 129.
Enthorodera Simon, 1907. Annl. Mus. Civ. Stor. Natur. Genova 43: 264.
Cyathidea Simon, 1907. Annl. Mus. Civ. Stor, Natur. Genova 43: 265.

Wendilgarda Keyserling is a small neotropical genus comprising only ten species. Members of the genus measure from 1 to 3 mm long and possess the following characters: uniformly colored carapace, as long as wide, with its cephalic region higher than the thoracic region; high clypeus three times AME diameter; sternum as long as wide, yellowish brown with grayish margins, moderately convex, and bearing few hairs; posterior margin extended beyond coxae IV; legs yellowish brown, tibiae longer or sometimes shorter than metatarsi; trichobothria of tibiae long in two or three irregular rows; AME largest or all eyes subequal, PME separation as long as one eye diameter; abdomen smooth, subglobular, wider than long, overhangs the cephalothorax, and often grayish black without markings; venter bears two indentations anterior and lateral to spinnerets; epigynum bears a scape; embolic division of male pedipalp very complex, apophysis with spatulate wide lobes.

These spiders are active all day, constructing webs most frequently in the early morning and afternoon. The webs are attached to rice stems above the water surface.

Wendilgarda liliwensis new species

(Figs 298a–f, 299a–e)

Description:

Female (Fig. 298a–f): Total length 2.32 mm. Cephalothorax 0.77 mm long, 0.70 mm wide, 0.39 mm high. Abdomen 1.55 mm long, 1.33 mm wide, 1.22 mm high. Cephalothorax light brown and broadest along thoracic area. Cephalic area much higher (0.34 mm) than the thoracic area (0.20 mm). All eyes light-colored, except AME with black margins. Eye diameter (mm): AME (0.09) > PME (0.07) > ALE (0.06) > PLE (0.05). AME–AME separation about one half AME diameter, PME–PME separation one LE diameter. Clypeus height 1.8 times AME diameter. Sternum dark brown, as long as broad, widest between coxae I and II and truncated basally, truncated end as long as the distance between the two yellow pits on the anterior end of the sternum. Chelicera with six (two prominent and four wart-like) promarginal, two large (one tridentate) retromarginal teeth, and about ten minute teeth between the promarginal and retromarginal portions. Legs yellow, leg formula 1423.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.64	0.28	0.48	0.38	0.30	2.08
2	0.58	0.22	0.40	0.34	0.30	1.84
3	0.40	0.22	0.27	0.25	0.25	1.39
4	0.60	0.24	0.44	0.34	0.24	1.86

Pedicel borne ca. one eye diameter dorsally in the thoracic area. Abdomen spheroidal, grayish brown, with four dark brown spots and six transverse bands dorsally. Epigynum a smooth brown plate, concave basally and slightly incised apically, scape cylindrically protruded with a rounded distal end.

Male (Fig. 299a–e): Total length 1.92 mm. Cephalothorax 0.72 mm long, 0.60 mm wide, 0.40 mm high. Abdomen 1.20mm long, 0.92 mm wide, 0.88 mm high. Sternum, eye pattern, and general coloration as in female. Clypeus 1.8 times AME diameter. Ratio of pedipalp width in ventral view to sternum width 0.85 : 0.89 mm. Leg formula 1243.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	0.62	0.18	0.54	0.44	0.30	2.08
2	0.54	0.16	0.46	0.36	0.26	1.78
3	0.38	0.18	0.30	0.30	0.18	1.34
4	0.40	0.18	0.34	0.36	0.26	1.54

Pedipalps relatively small, embolic division three-branched, paracymbium with a bluntly rounded tip, cymbial lamella acutely pointed.

Etymology: The species was named after the type locality.

Variation: Females range 1.61 to 2.32 mm in length, males from 1.32 to 1.92 mm.

Natural history: Found at the base of rice plants above the water surface. Sheet webs were made of several horizontally connected silken threads seen in between stems. A female was observed preying on a brown planthopper *Nilaparvata lugens* (Stål) nymph.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Magdalena Vill., holotype female, 23 April 1980, A.T. Barrion; Laguna Prov., Los Baños, IRRI Farm, two females paratypes, 29 October 1980, A.T. Barrion; one penultimate male, same data as paratypes, 10 October 1980; *Mindanao Is.*, South Cotabato Prov., Koronadal, Morales Vill., one male, 19 June 1985, A.T. Barrion.

Distribution: Philippines.

Remarks: Closely related to *W. clara* Keyserling from Puerto Rico, but differs from it in the shape of epigynum and structure of the male pedipalps.

FAMILY TETRAGNATHIDAE MENGE

(Long-jawed Spiders)

Most of these long-jawed spiders build webs in grassy or bushy areas near water. The snare bears few radii and an open hub on which the spiders rest or sit. Members of the family have long legs and body, except in the genus *Dyschiriognatha*, with rounded abdomen; eyes in two rows, may be parallel or convergent but LE never contiguous; well-developed chelicerae, long, often directed forward and diverging, with well-developed teeth; labium prominently rebordered; femora with a series of trichobothria dorsally close to base; auxilliary foot claws present except in *Pachygnatha*; and abdomen with or without pattern.

Male pedipalp relatively simple, prominent and hairy paracymbium emanates from base of tarsus. Epigynum reduced, epigastric fold strongly procurved, and the genital orifice occurs posteriorly behind the branchial opercula.

Two genera of tetragnathids – *Tetragnatha* P.A. Latreille, 1804 and *Dyschiriognatha* Simon, 1893 – are very common in the Philippine ricefields and throughout South and Southeast Asia.

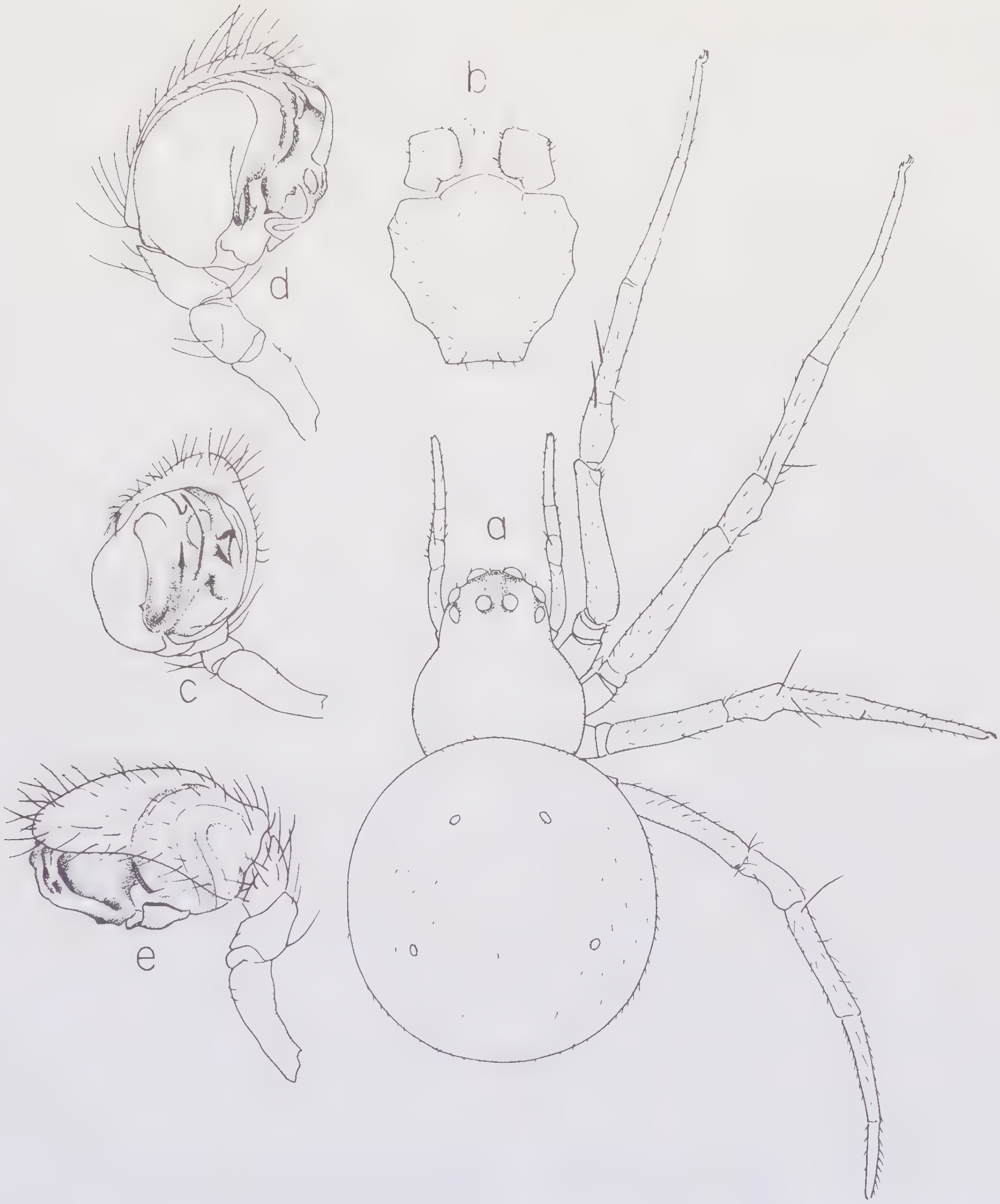


Fig. 299. Male *Wendilgarda liliwensis* n. sp. (a); sternum, labium, and maxillae (b); and ventral (c) and lateral (de) views of pedipalp.

KEY TO THE GENERA AND SPECIES OF LONG-JAWED SPIDERS

1 Apices of maxillae converging; abdomen spherical to ovoid; male chelicerae without locking apophysis. 2

– Apices of maxillae diverging; abdomen prominently slender and elongate; male chelicerae lacking apophysis. 3

2 Abdomen spherical, silvery with at least two pairs of black or reddish brown spots (Fig. 300a); chelicerae with three teeth each in the promargin and retromargin (Fig. 300bc); tracheal spiracle distinctly closer to spinnerets than to epigynal fold (Fig. 300e);

paracymbium angled, shoe-like, without prolateral process (Fig. 301df); embolus and conductor with a serrated apex with eight teeth (Fig. 301g). .... *Dyschiriognatha hawigtenera* n. sp. (Figs 300a–e, 301a–g)

– Abdomen ovoid with a broad median longitudinal dark brown to black band (Fig. 302a); chelicerae each with four teeth in promargin and retromargin, apical two wide apart and basal two close to one another (Fig. 302cd); paracymbium with a distinct prolateral process (Fig. 302i) and tip of embolus and conductor simple, bears no serrated part (Fig. 302j). ...... *Pachygnatha ochongipina* n. sp. (Fig. 302a–j)

3 Female *Tetragnatha*. 4

– Male *Tetragnatha*. 10

4 Posterior eye row strongly recurved, forming widely separated ALE and PLE. 5

– Posterior eye row straight to slightly recurved, ALE close to PLE. 7

5 Abdomen strongly tapered posteriorly (Fig. 303a), spinnerets almost at midlength of abdominal venter (Fig. 303b). .... *Tetragnatha javana* (Thorell) (Fig. 303a–f)

– Abdomen bluntly rounded to slightly pointed posteriorly, spinnerets in ventral tip. 6

6 Yellowish brown body; spinnerets in the caudal end of bluntly rounded abdominal tip (Fig. 309a); retromargin bears seven teeth, apical tooth isolated from the rest (Fig. 309b); epigynal fold with a moderately long process towards the posterior (Fig. 309d). .... *Tetragnatha vermifomis* Emerton (Fig. 309a–d)

– Light yellowish green; abdomen slightly exserted posterior to spinnerets, tip moderately pointed (Fig. 307b); retromargin with four or five closely set teeth (Fig. 307cd); epigynal fold rounded posteriorly (Fig. 307e). .... *Tetragnatha virescens* Okuma (Fig. 307a–e)

7 Auxiliary guide tooth (AX1) in the retromargin small or weak; fang without an excrescence tooth. 8

– AX1 of the retromargin strongly developed; fang bears an excrescence tooth (EX). 9

8 Promarginal guide tooth (Gu) and first largest tooth (T) widely separated, extra tooth in between Gu and T absent (Fig. 313de), enclosing at least four retromarginal teeth viewed dorsally; epigynal fold moderately long and enlarged apically, tip truncate to rounded (Fig. 313f). .... *Tetragnatha maxillosa* Thorell (Fig. 313a–f)

– Extra tooth present between promarginal guide tooth and first largest tooth (Fig. 315c); epigynal fold short, apex strongly recurved (Fig. 315g). .... *Tetragnatha ceylonica* Cambridge (Fig. 315a–g)

9 AX1 very large, passes base of fang, and highly visible dorsally (Fig. 317c); retromarginal guide tooth large (Fig. 317e), promarginal guide tooth distinctly separated from its auxiliary tooth (Fig. 317c); venter of fang toothless. .... *Tetragnatha mandibulata* Walckenaer (Fig. 317a–e)

– AX1 moderately small, not visible dorsally, retromarginal guide tooth small; promarginal guide tooth very close to its minute auxiliary tooth (Fig. 319c); venter of fang close to the base with a strong tooth (Fig. 319e). .... *Tetragnatha nitens* (Audouin) (Fig. 319a–f)

10 Abdomen prominently exserted beyond spinnerets from apical one eighth to midlength viewed laterally. 11

– Abdomen hardly exserted beyond spinnerets. ... 12

11 Spinnerets at about midventer of abdomen (Fig. 304a); locking apophyses far from base of fang, bifurcate apically in side view, inner process long (Fig. 304b); embolus and conductor rounded and relatively broad apically, basally with pleats (Fig. 304f). .. *Tetragnatha javana* (Thorell) (Fig. 304a–f)

– Spinnerets in apical one eighth of abdominal venter (Fig. 305b); locking apophysis simple, at apex of chelicera, almost at fang base (Fig. 305df); embolus and conductor oblique apically, pleat less basally (Fig. 305j). *Tetragnatha desaguni* n. sp. (Fig. 305a–j)

12 Locking apophysis with a truncate to minutely bifurcate apex (Fig. 306bd); paracymbium scoop-like, broad distally and subtruncate at tip, with a concave inner portion (Fig. 306gh); embolus and conductor slightly bifurcate apically, with pleats (Fig. 306i). *Tetragnatha llavaca* n. sp. (Fig. 306a–i)

– Locking apophysis different, if modified as above paracymbium not scoop-like. 13

13 ALE widely separated from PLE, PE row strongly recurved. 14

– ALE relatively close to PLE, PE row straight to slightly recurved. 15

14 Abdomen yellow-brown to silvery; tip not exserted beyond spinnerets (Fig. 310b); conductor distinctly indented retrolaterally (Fig. 310eg) and prolateral spur of paracymbium moderately long and rounded (Fig. 310f). .... *Tetragnatha vermiformis* Emerton (Fig. 310a–h)

– Abdomen yellowish green, tip rounded to slightly exserted beyond spinnerets (Fig. 308ab); conductor not markedly indented retrolaterally (Fig. 308h) and prolateral spur short (Fig. 308i). .... *Tetragnatha virescens* Okuma (Fig. 308a–i)

15 Abdomen bears marginal constrictions, laterals with grayish to black longitudinal stripes (Fig. 311ag); patella and femur of pedipalp each with a peg-like

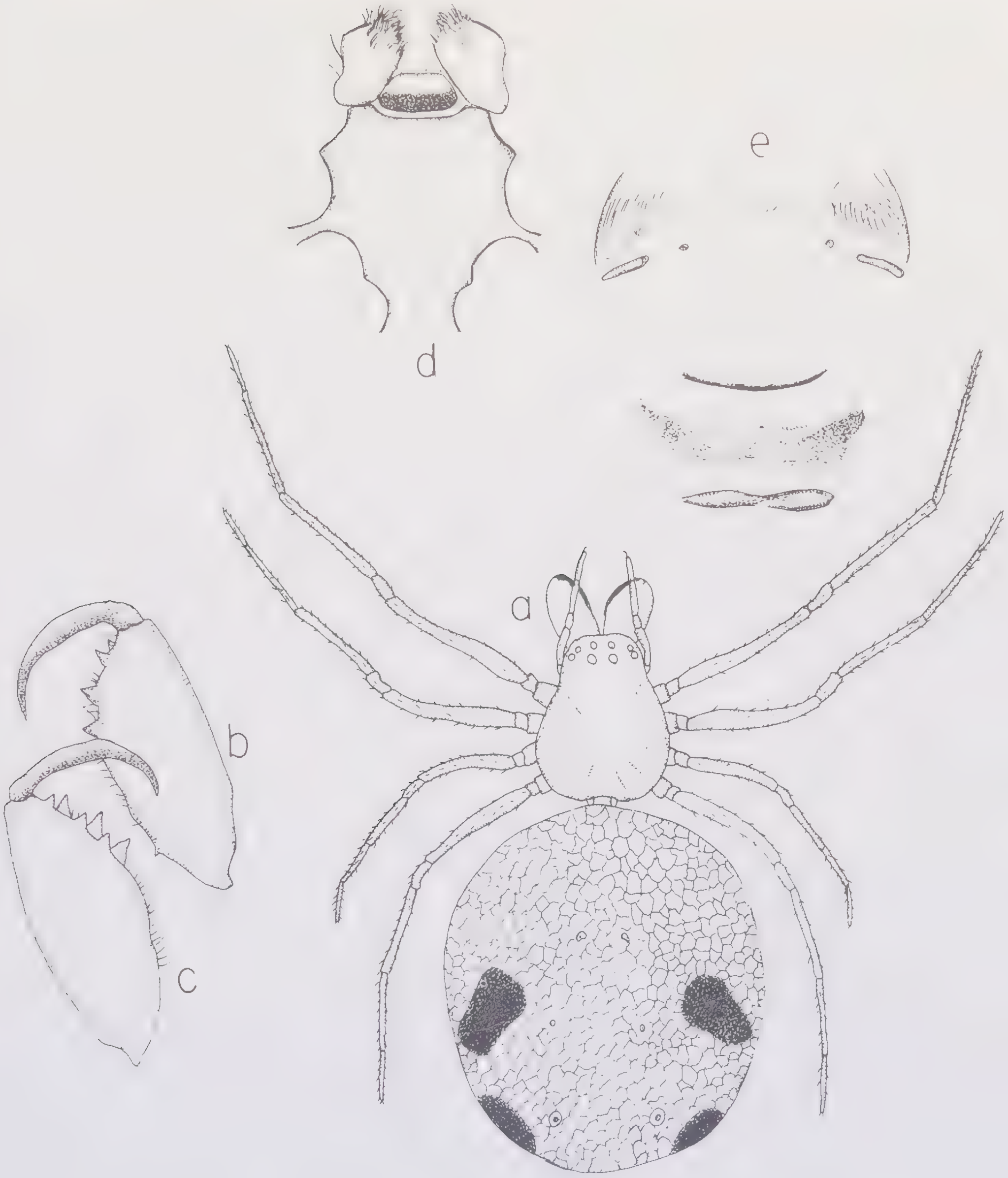


Fig. 300. Female *Dyschiriognatha hawigtenera* n. sp. (a); dorsal (b) and ventral (c) views of right chelicera; sternum, labium, and maxillae (d); and tracheal spiracle and epigynal fold (d).

tooth (Fig. 311j–l). .... *Tetragnatha okumae* n. sp. (Fig. 311a–p)

– Entirely not as above. 16

16 Dorsum of abdomen with a long brown sword-like median longitudinal band (Fig. 312a); first large tooth of promargin bifid to trifid (Fig. 312fg). .... *Tetragnatha iwahigensis* n. sp. (Fig. 312a–k)

– Abdominal dorsum without such marking; first large tooth of promargin normal. 17

17 Locking apophysis (a) simple, pointed at tip viewed laterally and dorsally (Fig. 318cd); tooth (t) or prominence and first largest tooth of promargin (T) absent; promarginal guide tooth present; apical process of conductor and embolus blunt to rounded (Fig. 318h). .... *Tetragnatha mandibulata* Walckenaer (Fig. 318a–h)

– Locking apophysis bifurcate or modified apically. 18

18 Carapace dark reddish brown; PE row longer than AE row, MOQ wider behind than in front (Fig. 316ab); paracymbium with a curved or sickle-shaped apical process and serrated margin near apex (Fig. 316jl); distal end of embolus and conductor twisted and attenuated (Fig. 316m). .... *Tetragnatha ceylonica* Cambridge (Fig. 316a–m)

– Carapace commonly yellowish brown to brown; paracymbium simple or cleft apically. 19

19 Apex of cheliceral promargin with three equally strong and large teeth (Fig. 320c); apex of paracymbium distinctly cleft (Fig. 320h). .... *Tetragnatha nitens* (Audouin) (Fig. 320a–i)

– Apicodorsal of chelicerae without the three equally strong large teeth in promargin, Gu and T wide apart and space in between enclosing two or three retromarginal teeth in dorsal view (Fig. 314c); apex of locking apophysis bifid (Fig. 314d); paracymbium slightly sclerotized retrolaterally, sclerotized prolaterally, apex not cleft (Fig. 314h). .... *Tetragnatha maxillosa* Thorell (Fig. 314a–i)

Genus *Dyschiriognatha* Simon

Dyschiriognatha Simon, 1893. Rev. Suisse Zool. 1 (3): 323.

A unique genus in the family of long-jawed spiders. It has globose silvery abdomen with or without spots dorsally, reddish brown carapace with the cephalic higher than the thoracic region, heavily sclerotized sternum extended posteriorly between coxae IV, rough and moderately stout chelicerae with teeth, subequal eyes except small PLE, MOQ often a square, AME slightly projected anterior to clypeus, legs without spines, female tracheal spiracle between epigastric fold and spinnerets, male pedipalp with a strongly rounded bulb, slender paracymbium without or with a reduced prolateral process, embolic division with a sclerotized and membranous structure apically with a serrated row of teeth.

It is a very small genus, comprising less than ten species scattered in the Palaearctic, Ethiopian, Neotropical and Oriental regions. *D. bedoti* Simon is the only species reported in the Oriental region (Simon 1893).

Dyschiriognatha hawigtenera new species
(Figs 300a–e, 301a–g)

Dyschiriognatha sp. Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24.

Description:
Female (Fig. 300a–e): Total length 2.35 mm. Cephalothorax 1.15 mm long, 0.80 mm wide, 0.85 mm high. Abdomen 1.20 mm long, 1.00 mm wide, 0.95 mm high. Cephalothorax reddish brown except black eye margins. Cephalic region prominently higher than the thoracic region, sloping posteriorly at about 55° angle. Eight eyes in two rows, AE row strongly recurved and PE straight. Eye diameter (mm): AME = ALE = PME = 0.08, PLE = 0.06. Eye separation (mm): AME–AME = 0.08, as long as one AME diameter, AME–ALE = PME–PME = 0.06, PME–PLE = 0.10. LE pedal-like and subcontiguous. AME projected anterior to clypeus. MOQ almost a square, slightly wider in front than behind (0.24 : 0.23 mm), posterior width as long as length. Clypeus slightly cleft midlongitudinally, height 2.5 times AME diameter. Sternum moderately swollen, brownish red to gray, slightly longer than wide, midanterior end indented to receive base of labium, extended laterally to carapace between coxae II and III, and widely truncate behind coxae IV. Labium twice broader than long, base 1.66 times wider than anterior end. Maxillae yellowish brown, longer than wide, and slightly converging apically. Chelicerae short and robust, vertical, swollen at midhalf, and rough ventrally opposite maxillae. Promargin bears three widely separated teeth. Retromargin with three teeth, apical one close to fang base, widely separated from the basal teeth. Legs uniformly yellow, bear no strong spines. Metatarsus I/tarsus I = 1.82. Tibia III as long as metatarsus III. Leg formula 1243. Pedipalp yellow, longer than all femora.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.20	0.38	1.24	1.09	0.60	4.51
2	1.15	0.35	1.05	0.89	0.53	3.97
3	0.75	0.25	0.58	0.58	0.34	2.50
4	1.13	0.30	0.85	0.75	0.38	3.41
Pedipalp	0.40	0.15	0.34	–	0.48	1.37

Abdomen subglobose, silvery, with two pairs of gray to black spots dorsally and a pale gray transverse band anterior to anal tubercle, extended laterally towards anterolaterals in line with swollen epigynal fold. Venter moderately high medially, lung slits separated by about 4.25 times lung slit length. Tracheal spiracle transversely long, constricted in midanterior, about twice the length of one lung slit, much closer to the spinnerets than to epigynal fold, by one diameter of basal segment of anterior spinnerets. Apices of anterior spinnerets small and converging, base of first segment broad, twice that of apical segment.

Male (Fig. 301a–g): Total length 2.21 mm. Cephalothorax 1.18 mm long, 0.80 mm wide, 0.63 mm high. Abdomen 1.03 mm long, 0.95 mm wide, 0.95 mm high. Cephalothorax similar in color to female, cephalic less elevated than female and somewhat coarse in the thoracic dorsum. Eye diameter (mm): PME = 0.10, ALE = AME = 0.09, PLE = 0.08. Eye separation (mm): AME–AME = AME–ALE = 0.08, PME–PME = 0.05, PME–PLE = 0.10. MOQ slightly wider in front than behind to subequal, length 1.19 times that of anterior width (0.21 mm). Clypeus height 2.22 times

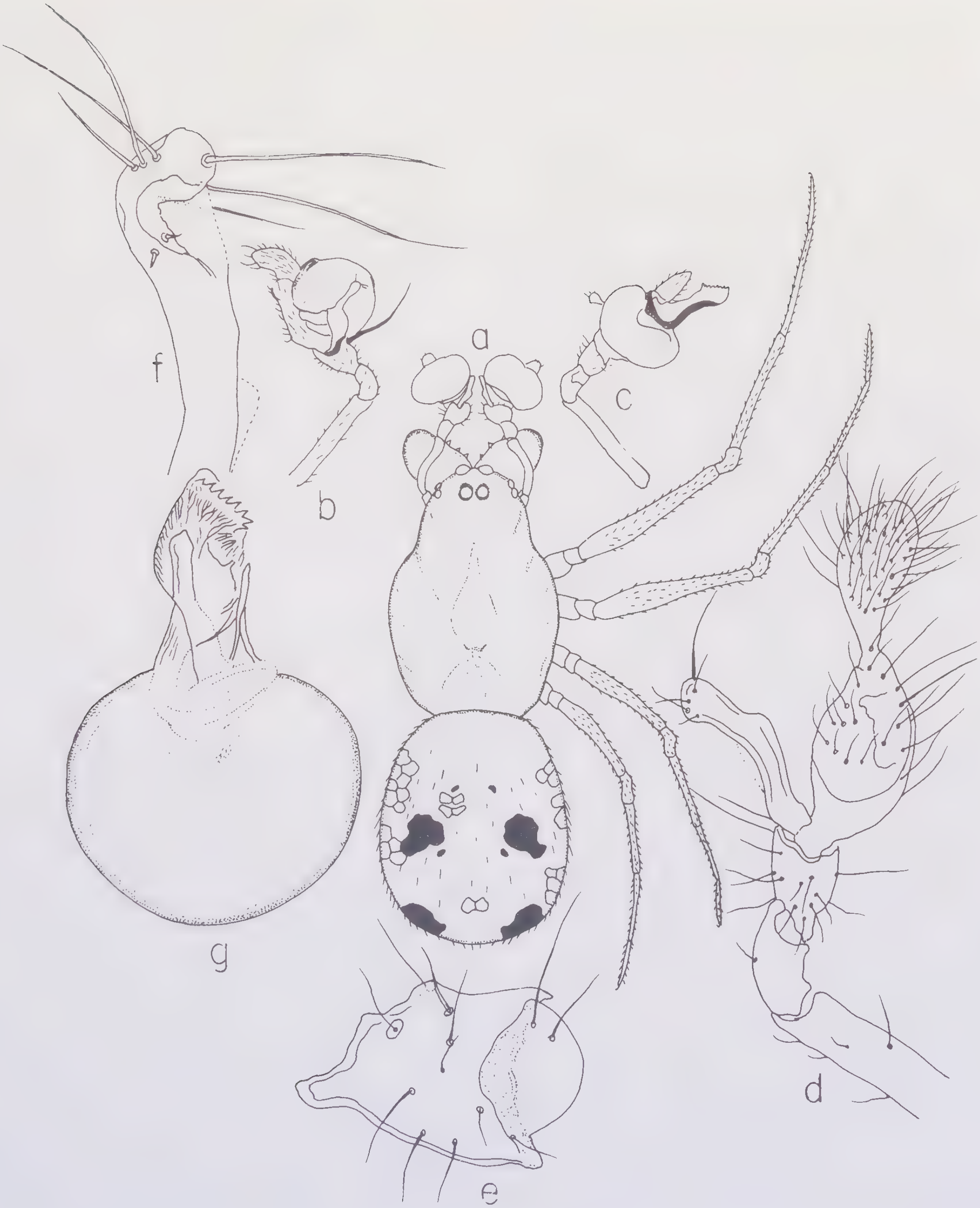


Fig. 301. Male *Dyschiriognatha hawigtenera* n. sp. (a); lateral (b) and ventral (c) views of pedipalp; pedipalp without bulb (d); tibia (e); paracymbium (f); and bulb including embolus and conductor (g).

AME diameter. Sternum, labium, and maxillae coloration and pattern as in female. Chelicerae rough ventrally and dorsally. Promargin and retromargin each with three teeth, in both cases apical tooth distally separated from the two basal teeth and basal tooth the largest. Fangs bear an inner tooth at almost midlength. Legs uniformly yellow and bear no spines. Metatarsus I/tarsus I = 1.81. Leg length 1243. Pedipalp slightly longer than combined length of femur II and patella II, but shorter to as long as combined length of patella II and tibia II. Tibia of pedipalp bears apical apophysis on both sides and strongly rounded process in between as viewed laterally, and with a subbasal trichobothrium, dorsally with a trichobothrium. Paracymbium sickle-shaped, apex with three or four long setae, and angulate approximately at apical one third. Cymbium constricted at basal three fifths, pit of palpal organ in basal one third, and club-shaped apically. Bulb distinctly subglobular and wider than high. Embolic region rough and with membranous and strongly sclerotized serrated teeth. Sclerotized serrated row of about eight teeth, all projected posterolaterally.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.25	0.36	1.34	1.14	0.60	4.69
2	1.15	0.35	1.18	1.00	0.56	4.24
3	0.78	0.28	0.66	0.60	0.36	2.68
4	1.06	0.25	0.90	0.75	0.38	3.34
Pedipalp	0.50	0.14	0.25	–	0.63	1.52

Abdomen globular to subglobular, with pattern similar to the female. Venter grayish yellow, with brownish lung slits and tracheal spiracle. Lung slits separated from each other by as much as three lung slits' length. Tracheal spiracle at about distal one third of distance between lung slit area and base of spiracles. Spinnerets yellow-brown, broad basally and converging apically.

Etymology: Named after its close similarity to *D. tenera*, in Tagalog 'hawig'.

Natural history: Commonly collected in ricefields in July to April using suction machine.

Material examined: PHILIPPINES: *Luzon Is*., Laguna Prov., Los Baños, IRRI Farm, holotype female, 10 August 1979, A.T. Barrion; six female and six male paratypes, same data as holotype; three males, 10 December 1977, A.T. Barrion; Pangasinan Prov., Manaoag, Pao Vill., two females and one male, 10 November 1980, J. Bandong; *Panay Is*., Iloilo Prov., Oton, Rizal Vill., three females and three males, 24 September 1981, A.T. Barrion; *Mindanao Is*., South Cotabato Prov., Koronadal, Morales Vill., seven males and four females, 5 January 1982, A.T. Barrion.

Distribution: Philippines.

Genus *Pachygnatha* Sundevall

Pachygnata Sundevall, 1823. Gen. Aran. Suecie: 16.

The genus *Pachygnatha* Sundevall is a small genus of long and thick-jawed spiders, comprising ca. 22 species, mostly from Palaearctic, African, Oriental, and Nearctic regions. They differ from *Tetragnatha* Latreille in having oval and rounded abdomen; cephalothorax without clear separation between cephalic and thoracic regions; chelicerae diverging, with strong apical and basal group of teeth; sternum with punctations; maxillae slightly convergent and not dilated distally; legs not greatly elongated and bearing no spines; tarsi without auxiliary tarsal claws; dorsum of abdomen ornamented with a reticulated folium; female epigynal fold simple, hardly ever with a long process; male palpal organ with bulbous tegulum, relatively slender paracymbium with a prolateral process, and tibia with trichobothria.

Pachygnatha Sundevall is a new genus record for the Philippines. *P. vorax* Thorell from Burma is the only species known from the Oriental region (Thorell 1895; Roewer 1942).

Pachygnatha ochongipina new species

(Fig. 302a–j)

Description:

Male: Total length 4.65 mm. Cephalothorax 2.15 mm long, 1.80 mm wide, 1.40 mm high. Abdomen 2.50 mm long, 1.80 mm wide, 1.70 mm high. Cephalothorax reddish brown, with yellow-brown submedian band and black eye margins. Cephalic distinct from thoracic region, with a moderately wide and deep foveal area. Eight eyes in two rows, strongly recurved AE slightly shorter than the straight to slightly recurved PE row. Eye diameter (mm): AME = PME = 0.11, ALE = 0.10, PLE = 0.09. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.19, ALE–PLE = 0.23, PLE–PME = 0.19, PME–PME = 0.18: MOQ wider behind (0.40 mm) than in front (0.34 mm), anterior width equals length. Clypeus height 1.18 times larger than one AME diameter. Sternum reddish brown, longer than wide, concave opposite each coxa, anterior margin medially indented for base of labium, with a truncate structure on edges, and posterior end extended between coxae, terminating in a truncate end. Labium reddish brown, wider than long. Maxillae light reddish brown, apices with scopulae converging. Chelicerae strong, robust, and diverging, each groove with four teeth. Apical and basal teeth of promargin large. Apical two teeth of retromargin widely separated, about twice the separation of the basal two teeth. Legs yellow, with grayish tinge on apices of segments, and spineless. Leg formula 1243. Pedipalp longer than longest femur I. Paracymbium relatively slender with a short prolateral process. Tip of embolus and conductor simple, slightly twisted

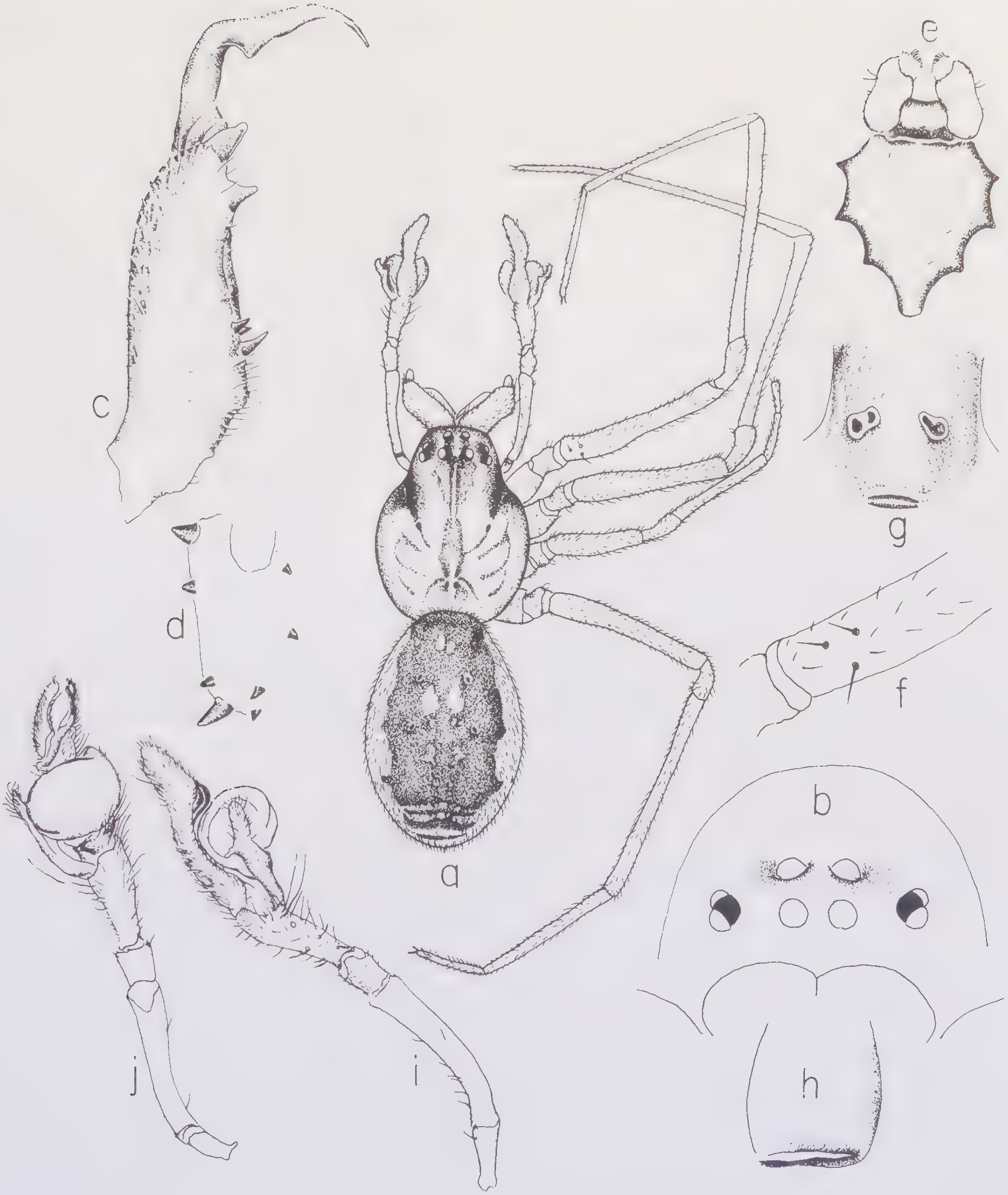


Fig. 302. Male *Pachygnatha ochongipina* n. sp. (a); frontal view of head (b); chelicera (c); cheliceral teeth (d); sternum, labium, and maxillae (e); base of femur I (f); ventral pattern of book lung (h); and lateral (i) and ventral (j) views of pedipalp.

and curved. Cymbium narrow medially and rounded apically.

Abdomen spherical, median area dark brown to black, and whitish laterally, venter yellow with a white U-band, a pair of comma-like bands present between book lungs. Spinnerets typical of the genus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.80	0.80	2.75	2.15	1.15	9.65
2	2.45	0.70	2.45	1.85	1.00	8.45
3	1.60	0.60	1.30	1.00	0.55	5.05
4	2.35	0.65	2.10	1.70	0.70	7.50
Pedipalp	1.10	0.35	0.50	–	1.00	2.95

Etymology: Named after the number of teeth in the chelicerae, in Tagalog 'ocho' = eight and 'ngipin' = teeth.
Natural history: Both males were collected by D-Vac suction machine from irrigated rice in September.
Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana Gadu Vill., holotype male, 21 September 1981, A.T. Barrion, paratype one male, same data as holotype.
Distribution: Philippines.

Genus *Tetragnatha* Latreille

Tetragnatha Latreille, 1804. Nouv. Dct. d'Hist. Nat. 24: 135.

Body prominently long and narrow, several times longer than wide; carapace oval, widest near the middle, flattened above, with a conspicuous thoracic groove; two eye rows either parallel or converge or diverge, but lateral eyes never contiguous, each eye surrounded by a black ring; chelicerae well developed, especially in males, and margins of fang furrow provided with numerous teeth; in males a strong projecting clasping spur may or may not be bifid at its tip; maxillae parallel, long, and dilated at the distal ends; abdomen at least twice as long as wide, in females often swollen at base; often base is slightly bifid and overhangs cephalothorax; epigynal slit posterior to lung slits in the procurved epigastric furrow; spinnerets usually terminal or almost so; legs and palpi very long and thin, but proportions differ in various species.

The genus is widespread throughout the world and common in wetland environments.

Tetragnatha javana (Thorell)

(Figs 303a–f, 304a–f)

Eucta javana Thorell, 1890. Ann. Mus. Civ. Genova 28: 236.
Tetragnatha javana (Thorell) Okuma, 1968. Mushi 42: 100.

Redescription:
Female (Fig. 303a–f): Total length 14.70 mm. Cephalothorax 3.10 mm long, 1.5 mm wide, 1.00 mm high. Abdomen 11.60 mm long, 1.50 mm wide, 1.40 mm high. Cephalothorax brown with a reddish brown pair of C-shaped foveae and black eye margins. Cephalic region parallel-sided, more than entire thoracic area. Eight eyes in two rows, AE straight to slightly recurved and longer (0.78 mm) than the strongly recurved PE row (0.65 mm). Eye diameter (mm): AME = 0.15, PME = PLE = 0.10, ALE = 0.08. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.23, ALE–PLE = 0.30, PME–PME = 0.15, PME–PLE = 0.14. MOQ wider behind than in front (0.38 : 0.35 mm), anterior width and length subequal. Clypeus height as long as one AME diameter. Sternum yellow, clothed with pale gray to brown hairs, longer than wide, and extended laterally and posteriorly. Labium reddish brown except yellow apical margin. Maxillae yellowish brown, 2.7 times longer than broad, moderately expanded apically, basal three fourths with a longitudinal ridge. Chelicerae about one half carapace length, promargin with seven teeth, excluding the small prominence near the first largest tooth (T). Retromargin has six teeth. Subapicolateral part of chelicera bears a tooth. Fang toothless. Legs long and slender, yellowish brown to brown. Spination in femur I = 3-0-5/6-2, tibia I = 2-0-3-3, metatarsus I = 1-0-1-2; femur IV = 4/5-0-3-1, tibia IV = 1-0-2-2, metatarsus IV = 1-0-2-1. Metatarsus I/tarsus I = 5.29. Leg formula 1243. Pedipalp yellow with a single-clawed tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.80	1.15	6.90	7.40	1.40	23.65
2	4.30	0.90	3.70	3.80	0.90	13.60
3	2.20	0.50	1.20	1.60	0.60	6.10
4	4.80	0.70	3.50	3.50	0.70	13.20
Pedipalp	1.00	0.40	0.65	–	0.90	2.95

Abdomen yellow, tapers posteriorly, and pointed tip extends prominently beyond spinnerets, either straight or curved upwards or downwards. Spinnerets usually at 0.54–0.62 abdominal length from the anterior. Epigynal fold relatively short, distal fold wider than long, and narrowed apically with a recurved tip.
Male (Fig. 304a–f): As in female except length, eye diameter, spinnerets in apical one fourth of abdominal venter, and pedipalp. Total length 10.50 mm. Cephalothorax 2.80 mm long, 1.30 mm wide, 0.90 mm high. Abdomen 8.70 mm long, 1.00 mm wide, 0.95 mm high. Eye diameter (mm): AME = 0.13, PME = PLE = 0.10, ALE = 0.08. MOQ square. Clypeus height as long as one AME diameter. Sternum, labium, and maxillae similar to female. Chelicerae about 0.70 length of carapace. Promargin with five or six teeth and a strong apically bifurcated locking apophysis viewed laterally. Retromargin bears eight teeth. Fang long, almost reaching swollen base of chelicerae, without excrescence and cusp. Legs long and slender. Leg formula 1423. Pedipalp's femur as long as to slightly longer than tibia plus tarsus length. Paracymbium moderately broad, becoming slender in apical one half, prolateral spur rounded, and basoprolateral one half slightly concave. Conductor and embolus slightly swollen at tip, with three ridges in basal part.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	8.45	1.10	9.05	9.50	1.70	29.80
2	5.00	0.80	4.45	4.65	1.00	15.90
3	2.60	0.40	1.45	2.00	0.60	7.05
4	5.70	0.70	4.50	4.40	0.80	16.10
Pedipalp	1.60	0.40	0.60	–	0.90	3.50

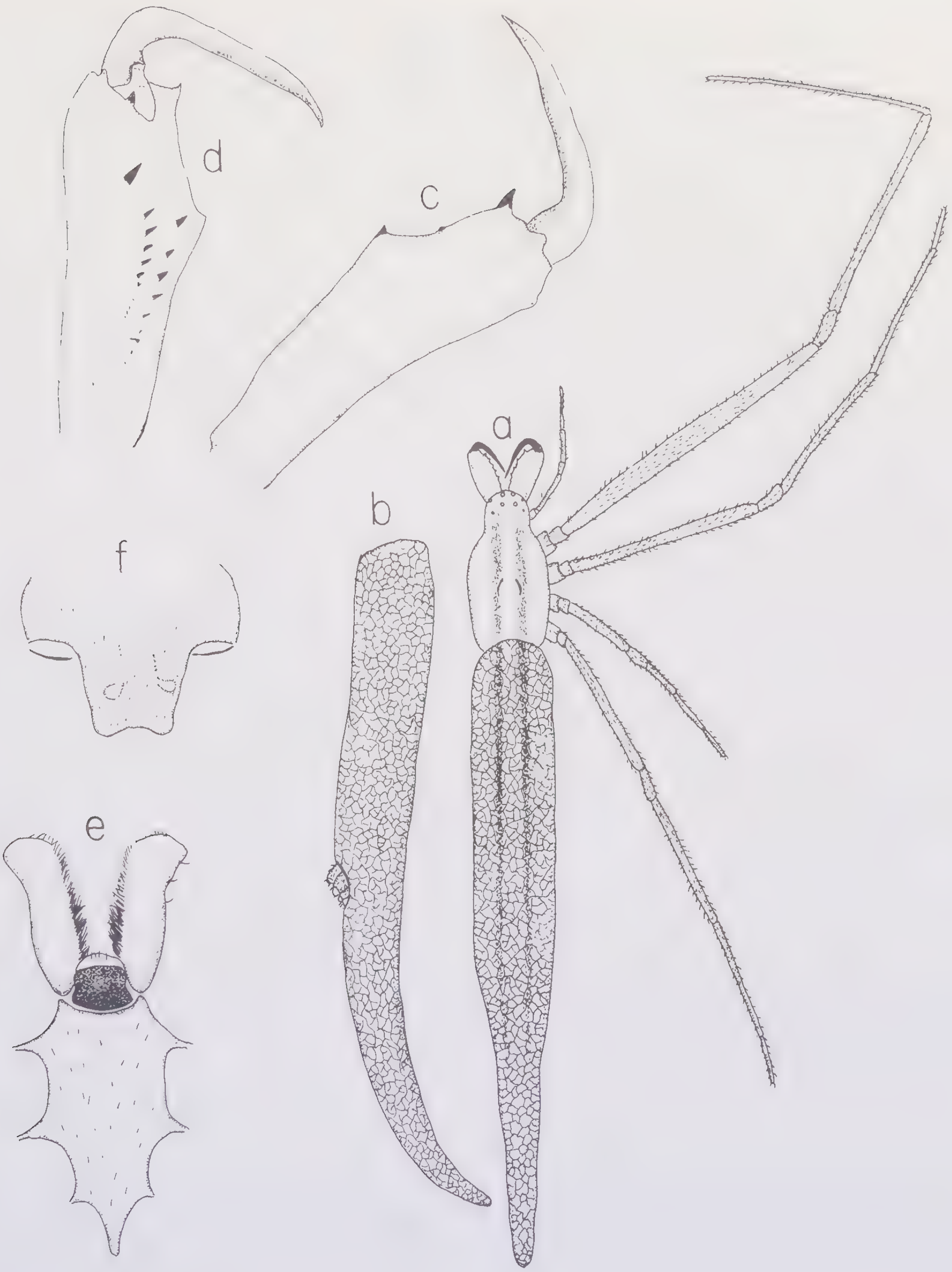


Fig. 303. Female *Tetragnatha javana* (Thorell) (a); lateral view of abdomen (b); dorsal (c) and ventral (d) views of right chelicera; sternum, labium, and maxillae (e); and epigynal fold (f).

Abdomen as in female, spinnerets usually in apical one fourth ventrally.

Natural history: Commonly collected from rice and rice-based crops. Adults occur in August, November, and summer.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Alcala, five females, one male, and ten immatures, 21 September 1981, A.T. Barrion; Solana, Iraga and Bangag Vill., 16 females, seven males, and two immatures, 21 September 1981, A.T. Barrion; Abra Prov., Bangued-Salapadan, ten females and three males, 23 September 1989, M. Perez and A.T. Barrion; Mt.

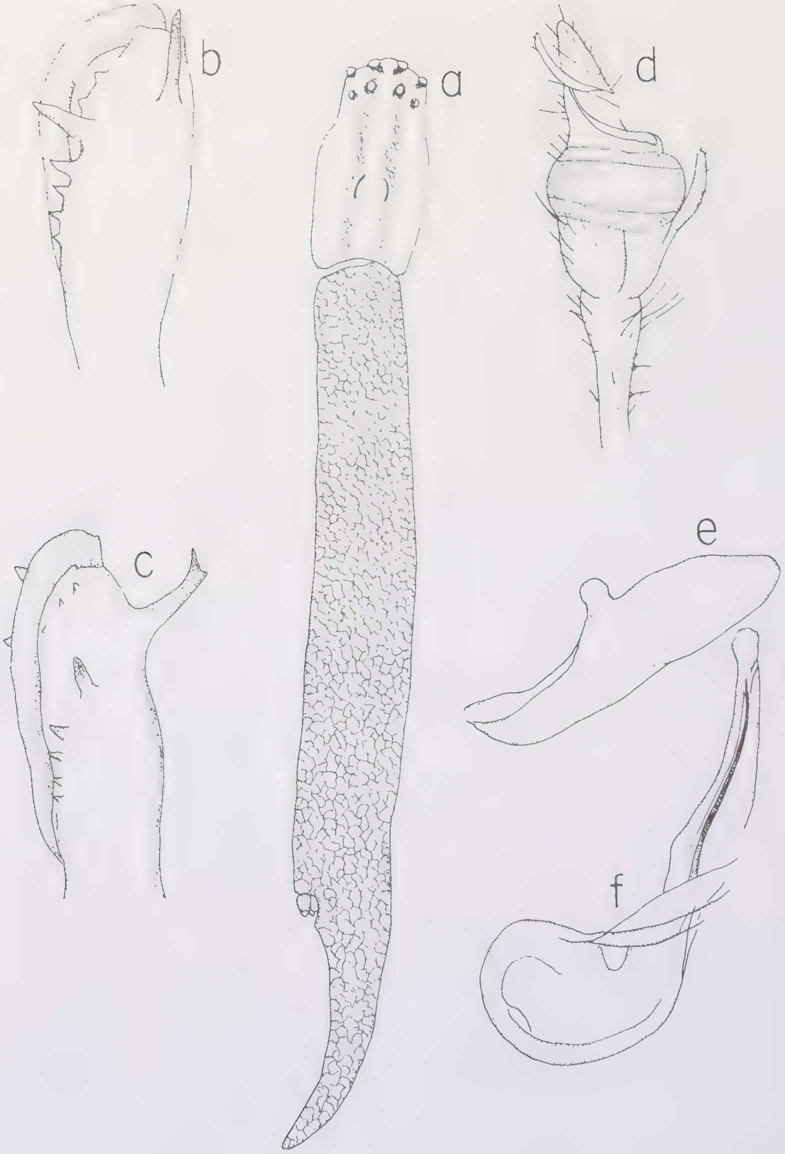


Fig. 304. Male *Tetragnatha javana* (Thorell), lateral view (a); dorsal (b) and lateral (c) views of right chelicera; retrolateral view of pedipalp (d); paracymbium(e); and tip of embolus and conductor (f).

Province, Bontoc, 15 females, eight males, and 11 immatures, 24–25 October 1979, A.T. Barrion and R. Roxas; Ifugao Prov., Banawe, six females and ten males, 27 March 1979, A.T. Barrion and C. de Castro; 22 females and eight males, 24 October 1979, A.T. Barrion; Nueva Viscaya Prov., Bongabong, 106 females, 21 males, and 62 immatures, September 1989, G. Aquino; Nueva Ecija Prov., Zaragoza, Jaen, 28 females, six males, August 1987, D. Estaño; Cabanatuan, Sto. Domingo, 18 females, ten males and 26 immatures, 15 September 1978, A.T. Barrion and M. Lumaban; Pangasinan Prov., Manaoag, Pao-Lipit, 88 females, 21 males, 56 immatures, 17 August 1979, A.T. Barrion; 13 females, four males, and 22 immatures, 1 February 1978, A.T. Barrion and C. de Castro; Bani, eight females and five males, 12 October 1982, A.T. Barrion; Laguna Prov., Los Baños, IRRI Farm, 56 females, 18 males, 42 immatures, 16 September 1984, M. Perez; Victoria, 11 females, three males, and 11 immatures, 10 July 1988, P. Pantua; Calauan, five females and eight immatures, July 1988, M. Leron; Siniloan, Magsaysay Vill., six females, two penultimate males, August 1984, R. Apostol; Liliw, Tuybaana Vill., 207 females, 58 males, 172 immatures, July–August 1981, COPR group; Batangas Prov., Tanauan, Cale Vill., 72 females, ten males, 52 immatures, August 1978, O. Serrano and R. Apostol; Lipa, Marauoy Vill., 21 females, eight males, ten immatures, July 1977, R. Barrion; Lian, six females, 3 March 1989, E. Rico; Quezon Prov., Real, Llavac Vill., 22 females, 14 males, 136 immatures, 24 July–10 August 1984, M. Perez and A.T. Barrion; Camarines Norte Prov., Daet, 12 females and four males, 23 September 1987, M. Perez; Camarines Sur Prov., Naga, one female and one male, 23 September 1987, J.L.

Catindig; Albay Prov., Cagsawa, 12 females and two males, B. Garcia; *Panay Is.*, Iloilo Prov., Oton, 88 females, 26 males, and 208 immatures, July–August 1979, M.D. Lumaban; Capiz Prov., Dumanao, Astorgas, eight females and eight females, 16–17 February 1981, A.T. Barrion; Palawan Is., Palawan Prov., Narra, ten emales, four males, and 32 immatures, 24 April 1979, C. de Castro; *Mindanao Is.*, South Cotabato, Koronadal, 46 females, 12 males, 106 immatures, 24–29 August 1989, N. Velasco; Zamboanga del Sur, Mangosatubig, 11 females, eight males, and 31 immatures, 9 August 1979, A.T. Barrion. **INDONESIA:** Yogyakarta, Klaten, Kerang Anon, 17 females and three males, 22 August 1989. **VIETNAM:** Ho Chi Minh, Song Phuong Vill., eight females, two males, and 11 immatures, 9 August 1990, A.T. Barrion; Tien Gian Prov., Cai Lay Vill., 15 females and six immatures, 18 August 1990. **CAMBODIA:** Takeo Prov., Kampung Spen, Prey Pdau, 86 females, seven males, and 18 immatures, 18–19 October 1989, H. Rapusas and J. Bandong. **LAOS:** Vientianne, 16 females and one male, 28 September 1991, H. Rapusas. **THAILAND:** Prachinburi Prov., PRRI, 52 females, 16 males, and 112 immatures, 26–28 July 1989, A.T. Barrion. **BANGLADESH:** Dacca, Joydevpur, 16 females and three males, August 1977, H.D. Catling. **INDIA:** Madurai, Tamil Nadu, two females and one male, September 1985, M. Venogopal.
Distribution: Africa, South and Southeast Asia, and New Guinea.
Remarks: A remarkably large (14.35 mm long) female specimen showed aberration in the eye pattern. The left AME was much longer than the right AME but left PME was missing. It had only seven eyes, four anterior and three posterior. *T. javana* (Thorell) was first reported from Bangladesh at Bangladesh Rice Research Institute (BRRI) in 1984 (Barrion 1984).

Tetragnatha desaguni new species
(Fig. 305a–j)

Description:
Male: Total length 8.30 mm. Cephalothorax 2.10 mm long, 1.10 mm wide, 0.60 mm high. Abdomen 6.20 mm long, 0.75 mm wide, 0.70 mm high. Cephalothorax yellowish brown, darker in the parallel-sided cephalic area and deep fovea, yellowish in the thorax, moderately flat, and clothed with fine short white hairs. Eye margins black, both rows equally recurved, with AME beyond clypeus, and AE row longer (0.68 mm) than PE row (0.60 mm). Eye diameter (mm): AME = 0.14, PME = PLE = 0.11, ALE = 0.10. Eye separation (mm): AME–AME = 0.09, AME–ALE = ALE–PLE = 0.10, PLE–PME = 0.08, PME–PME = 0.18. MOQ wider in front (0.38 mm) than behind (0.36 mm), length about 0.76 anterior width. Clypeus height very small, 0.18 AME diameter. Sternum yellow, smooth, and partly convex, longer (1.2 mm) than wide (0.80 mm), anterior margin uniformly concave almost entirely for base of labium, extended laterally, and bears a shortly rounded extension between coxae IV. Labium pale brown, except yellow apical margin, wider (0.40 mm) than long (0.33 mm). Maxillae yellow, three times longer than broad. Chelicerae shorter than carapace, ca. 0.89 of its length. Promargin with five teeth and a locking apophysis. Retromargin with seven teeth. Guide teeth of both margins U-shaped in inner lateral view, apically rounded locking apophysis at tip of chelicera, and retromarginal guide tooth U-shaped in outer lateroventral view. Legs uniformly yellow and very slender. Spination in femur I = 1-0-5/6-4/5, tibia I = 1-0-6-6, metatarsus I = 1-0-0-1, femur IV = 4-0-0-0, tibia IV = 1-0-3-2/4, metatarsus IV = 1-0-1-0. Metatarsus I/tarsus I = 4.48. Leg formula 1243. Pedipalp longer than femur III, about one half of femur I, combined length of femur and patella as long as combined length of tibia and tarsus. Paracymbium broadest anterior to midlength along the prolateral spur, with a rounded apex, 2.54 times longer than wide, rounded at tip, reaching the apex of the second transverse portion of tegulum. Cymbium very long, 2.07 times longer than tibia, simple and rounded distally. Embolus and conductor without pleats, apex moderately enlarged and oblique towards tip of cymbium.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.60	0.80	6.95	6.50	1.45	22.30
2	4.90	0.70	4.55	4.30	1.15	15.60
3	3.00	0.40	2.05	2.30	0.70	8.45
4	5.40	0.55	4.50	4.25	0.80	15.50
Pedipalp	1.28	0.35	0.53	–	1.10	3.26

Abdomen yellow, thin, and slender, narrower than carapace, posterior and pointed, as in *T. javana*, and exserted considerably beyond spinnerets at ca. apical one eighth.
Etymology: Named after the collector Mr Serapio 'Sonny' de Sagun.
Natural history: Handpicked while resting on a rice leaf in September.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Batarasa, holotype male, 26 September 1984, S. de Sagun.
Distribution: Philippines.

Tetragnatha llavaca new species
(Fig. 306a–i)

Description:
Male: Total length 4.70 mm. Cephalothorax 1.70 mm long, 0.90 mm wide, 0.90 mm high. Abdomen 3.00 mm long, 1.00 mm wide, 0.80 mm high. Cephalothorax brown except black eye margins. Eight eyes in two rows, shorter AE more recurved than PE row (0.70 : 0.80 mm). Eye diameter (mm): AME–PLE = 0.14, PME = 0.13,

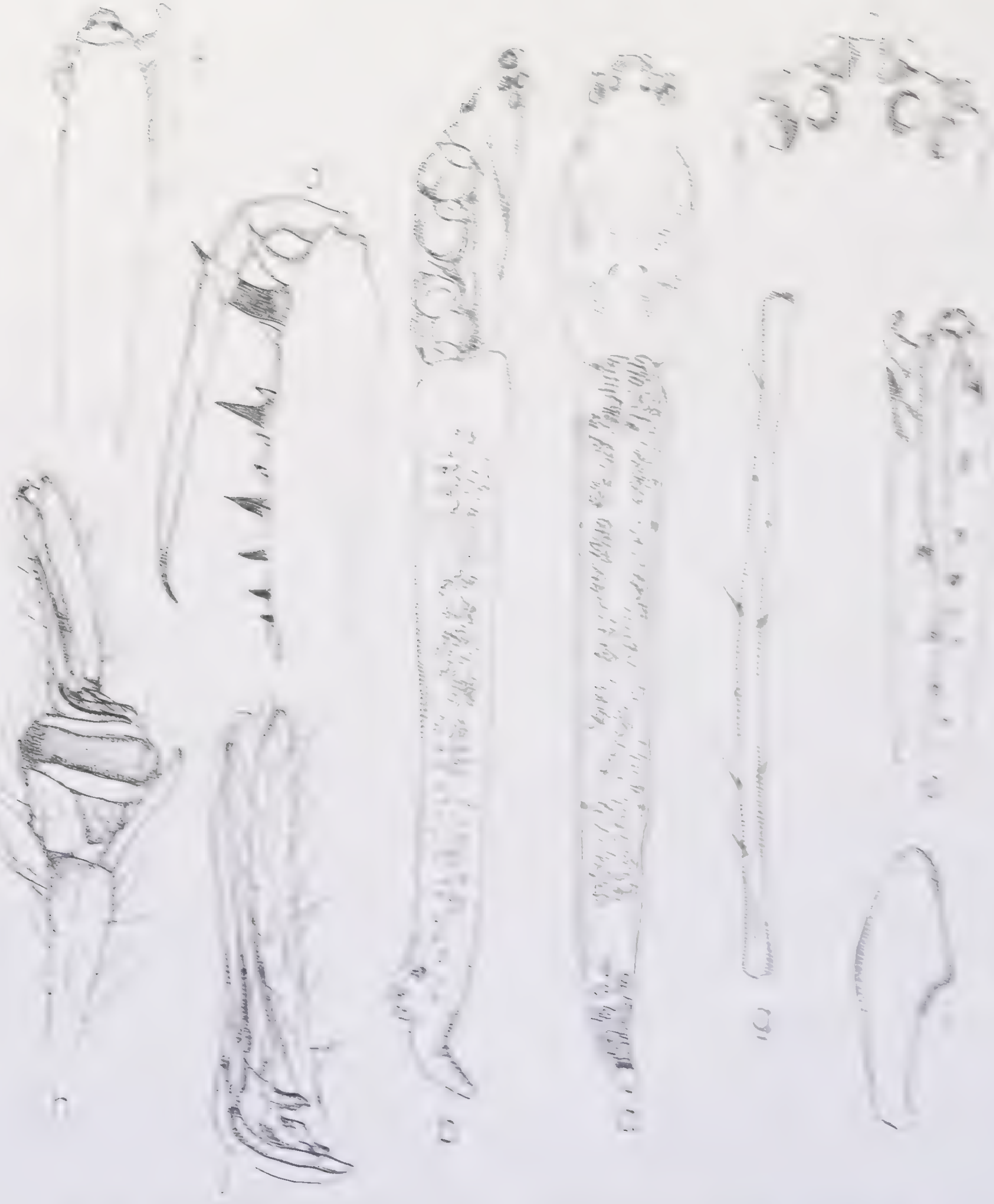


Fig. 306. Male *Tetragnatha desaguni* n. sp., dorsal (a) and lateral (b) habitus, eye pattern (c); dorsal (d), ventral (e), and lateral (f) views of chelicera, femur I (g); palpal organ (h); paracymbium (i); and tip of embolus and conductor (j).

ALE = 0.08. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.14, ALE–PLE = 0.06, PLE–PME = 0.18, PME–PME = 0.20. MOQ wider behind (0.40 mm) than in front (0.34 mm), length shorter than anterior width (0.30 : 0.34 mm). Clypeus height small rarely 0.40 AME diameter. Sternum brownish yellow, longer than wide (0.90 : 0.73 mm), typically *Tetragnatha*. Labium brown, with yellow anterior margin, bell-shaped. Maxillae yellow prolaterally and brown retrolaterally, moderately wide distally and proximally. Chelicerae reddish brown, shorter than carapace. Promargin with teeth, excluding the locking apophysis, with truncate

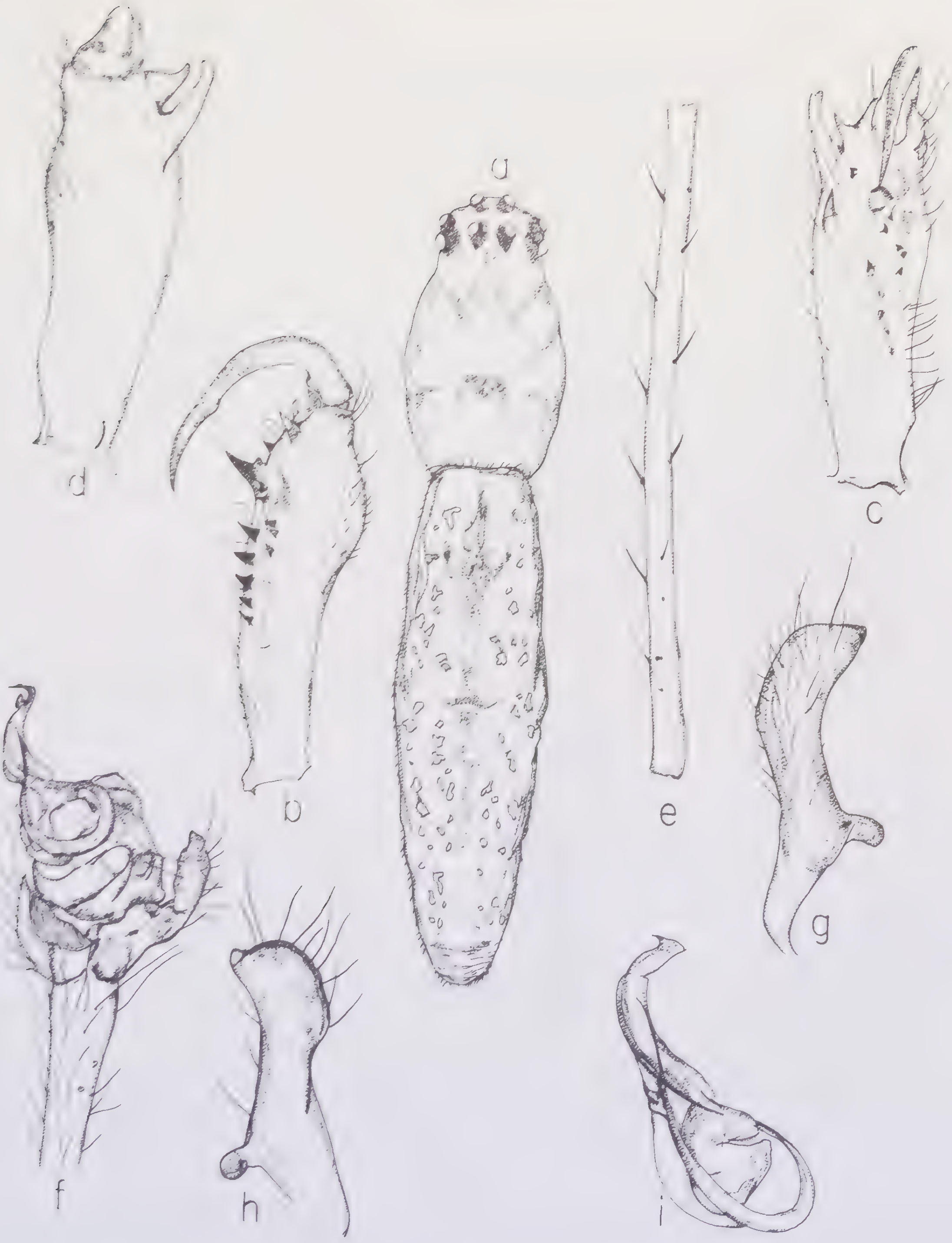


Fig. 306. Male *Tetragnatha llavaca* n. sp. (a); dorsal (b), ventral (c), and lateral (d) views of chelicera; femur I (e); retrolateral view of palp (f); lateral (g) and ventral (h) views of paracymbium; and tip of embolus and conductor (i).

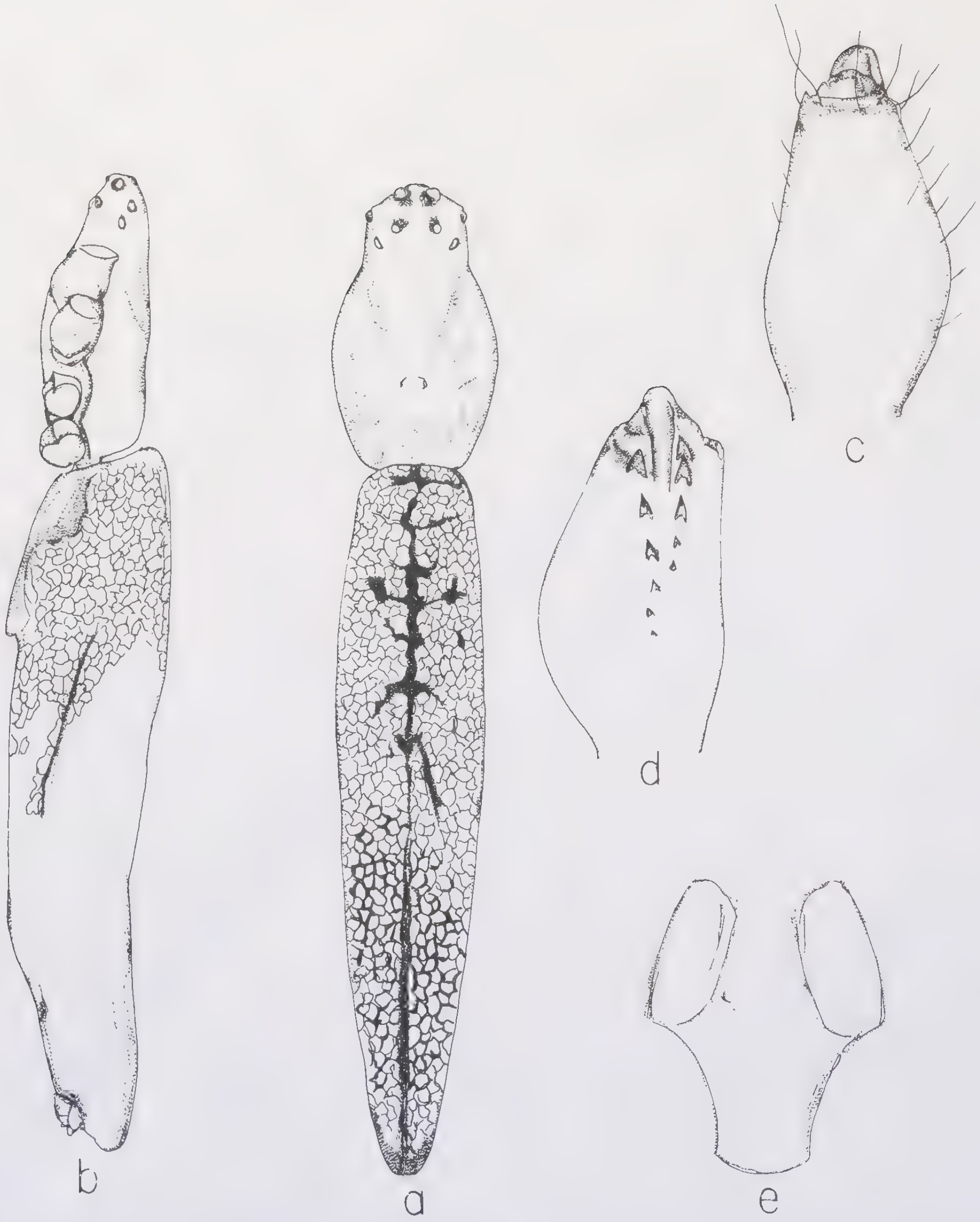


Fig. 307. Female *Tetragnatha virescens* Okuma, dorsal (a) and lateral (b) habitus; dorsal (c) and ventral (d) views of right chelicera; and epigynal fold (e).

tip, locking apophysis on an elevated base, obliquely truncate anteriorly, tooth minute, Gu short and bluntly truncate at tip, with two small teeth near its base, T strongly developed. Retromargin bears six teeth – three basal, two middle and one apical. Legs long and slender, yellowish brown except pale black apices of tibiae, metatarsi, and tarsi. Spination in femur I = 1-0-6/7-4/5, tibia I = 1-0-3-3, metatarsus I =1-0-0-1, femur IV = 4-0-0-0, tibia IV = 1-0-2-3, metatarsus I = 1-0-0-0. Leg formula 1423. Pedipalp ca. one half of femur III. Paracymbium scoop-like apically viewed laterally, constricted anterior of prolateral spur, and subrectangular towards distal end, with a truncate tip. Embolus and conductor slightly bifurcate at tip viewed on top, one part hooked downward, and with pleats basally. Cymbium very slightly acute apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.45	0.70	4.30	4.70	1.00	15.15
2	2.50	0.55	2.10	2.10	0.60	7.85
3	1.00	0.40	0.70	0.90	0.40	3.40
4	2.80	0.40	2.00	2.40	0.65	8.25
Pedipalp	0.90	0.15	0.38	–	0.65	2.08

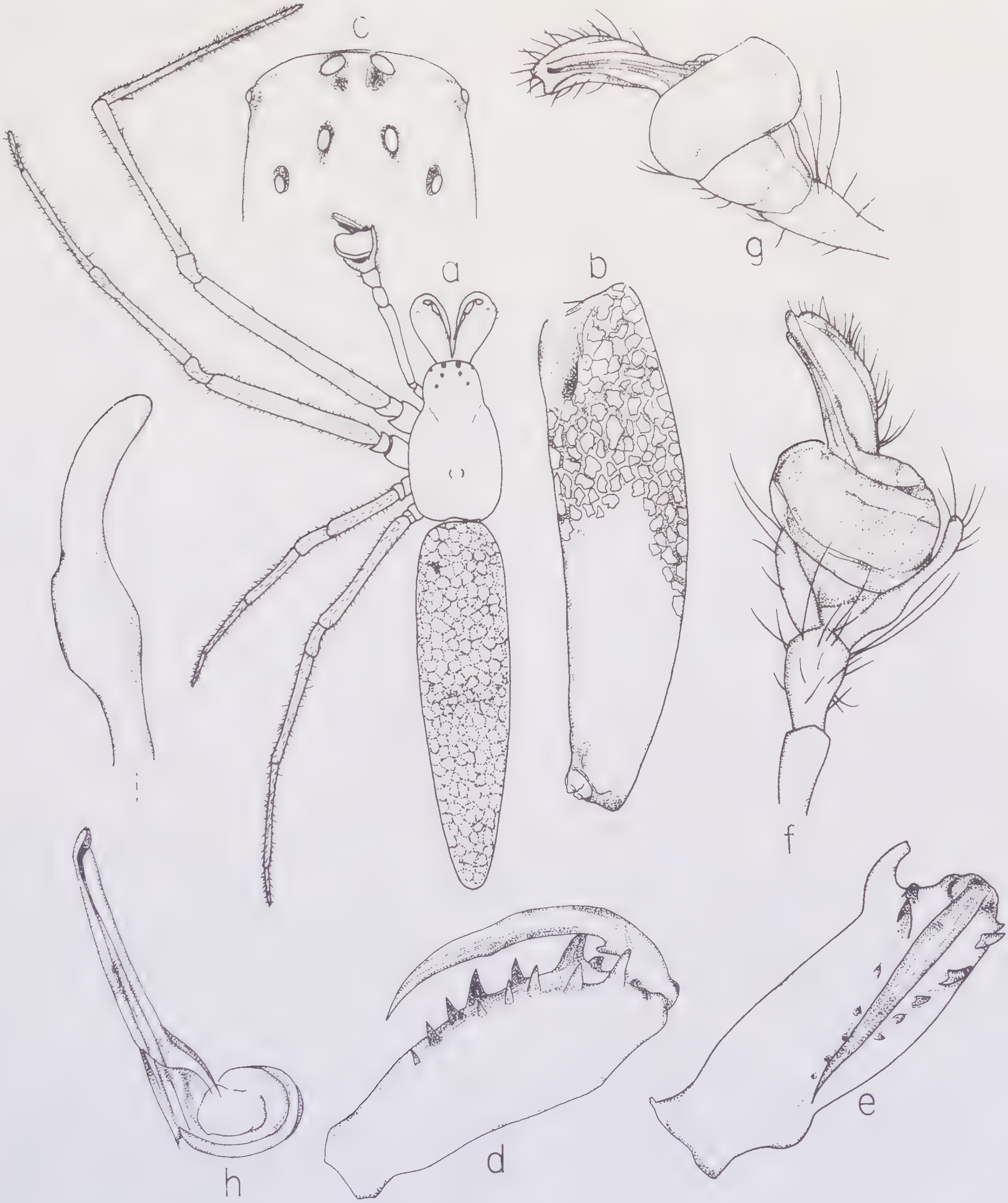


Fig. 308. Male *Tetragnatha virescens* Okuma (a); side view of abdomen (b); eye pattern (c); dorsal (d) and lateral (e) views of right chelicera; retrolateral (f) and ventral (g) views of pedipalp, tip of embolus and conductor (h); and paracymbium (i).

Abdomen elongate, yellowish brown, with gray longitudinal stripe dorsally, venter yellow, with a long transverse pale slit in posterior one fourth. Spinnerets all caudal of abdomen, and diverging apically.

Etymology: Named after the type locality.

Natural history: The single specimen was taken from kerosene light trap collections in the early morning of December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 28 December 1984, R. Apostol.

Distribution: Philippines.

Tetragnatha virescens Okuma

(Figs 307a–e, 308a–i)

Tetragnatha virescens Okuma, 1979. Esakia 14: 73.
T. virescens Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24.

Redescription:

Female (Fig. 307a–e): Total length 6.85 mm. Cephalothorax 1.85 mm long, 1.23 mm wide, 0.85 mm high. Abdomen 5.00 mm long, 1.20 mm wide, 1.18 mm high. Cephalothorax longer than wide, yellow brown except black eye margins. Cephalic area distinctly narrower than thoracic area (0.73 : 1.23 mm) and nearly parallel-sided. Fovea deep and transverse. Eight eyes in two rows, AE row slightly recurved and longer (0.69 mm) than strongly recurved PE row (0.55 mm). Eye diameter (mm): AME = 0.09, PME = 0.08, PLE = 0.06, ALE = 0.05. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.23, ALE–PLE = 0.20, PLE–PME = 0.11, PME– PME = 0.18. MOQ with subequal length and posterior width (0.30 mm) slightly wider than anterior width (0.28 mm). Clypeus height 0.67 AME diameter. Sternum yellow and heart-shaped, longer than wide, strongly rounded posteriorly in front of coxae IV. Labium reddish brown in basal two thirds and yellow apically, slightly wider than long. Maxillae yellow, twice longer than broad. Chelicerae yellow, vertical, and bearing reddish brown fang. Promargin with six teeth and retromargin has five. Leg long and slender, uniformly yellow. Spination in femur I = 0/1-0-3-0, tibia I = 0-0-3-3, metatarsus I = 0-0-1-1; femur IV = 3-0-0-0, tibia IV = 1-0-2-2-, metatarsus IV = 1-0-2-1. Metatarsus II as long as tibia II. Metatarsus I/tarsus I = 3.55. Leg formula 1243. Pedipalp yellow with a single claw, about one half length of femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.05	0.85	4.10	3.90	1.10	14.00
2	2.80	0.70	2.50	2.50	0.80	9.30
3	1.45	0.40	1.00	1.10	0.50	4.45
4	3.10	0.55	2.40	2.35	0.65	9.05
Pedipalp	0.63	0.25	0.48	–	0.65	2.01

Abdomen elongate, pale yellowish green to silvery yellowish green, tip moderately pointed and slightly exserted beyond spinnerets. Epigynal fold entire, distal end either truncate or slightly rounded.

Male (Fig. 308a–i): Total length 4.70 mm. Cephalothorax 1.60 mm long, 1.10 mm wide, 0.70 mm high. Abdomen 3.10 mm long, 0.80 mm wide, 0.90 mm high. Very similar to female except in leg length, eye diameter, and palpal organ. Eye diameter (mm): AME = 0.10, PME = PLE = 0.08, ALE = 0.05. Eye separation (mm): AME–AME = PME–PLE = 0.10, PME–PME = ALE–AME = 0.15, ALE–PLE = 0.23. MOQ slightly narrower in front (0.28 mm) than behind (0.29), length slightly longer than posterior width. Clypeus height as long as one AME diameter. Sternum, labium, and maxillae as in female. Chelicerae with five promarginal teeth and seven in retromargin, plus the locking apophysis. Fang with an inner cusp in basal one third. Legs pale yellow-brown, with yellowish femora. Spination in femur I = 0-1-0-2/3-0, tibia I =0-0-3-3, metatarsus I = 1-0-1-1/2, femur IV = 4-0-1-0, tibia IV = 1-0-2-2, metatarsus IV = 1-0-2-1. Metatarsus II as long as tibia II, as in leg III. Metatarsus I/tarsus I = 3.63. Leg formula 1243. Pedipalp 0.60 length of femur I, tibia slightly longer than patella, paracymbium moderately slender apically, with a rounded prolateral process. Cymbium half-twisted, cleft apically. Embolus and conductor bear a small hook projected laterally subapically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.85	0.70	4.40	4.35	1.20	14.50
2	3.05	0.55	2.80	2.80	0.85	10.05
3	1.50	0.40	1.10	1.10	0.45	4.55
4	3.30	0.50	2.70	2.70	0.70	9.90
Pedipalp	0.90	0.25	0.28	–	0.88	2.31

Abdomen higher than wide, elongate with color pattern similar to the female. Abdominal tip hardly exserted beyond the spinnerets.

Natural history: Common in all rice environments, grasslands, and fallow fields. They were also collected from other crops, such as maize, wheat, sorghum, and legumes.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, 12 females, eight males, and 16 immatures, 18 July 1977, A.T. Barrion; *Leyte Is.*, Maasin, ten females and five males, 16 July 1985, A.T. Barrion; *Panay Is.*, Iloilo, Oton, Cordova, five females and three males, 10 November 1979, M.D. Lumaban; *Mindanao Is.*, South Cotabato, Koronadal, Morales, 15 females and ten males, 5 January 1982, A.T. Barrion. **THAILAND:** Prachinburi Prov., Prachinburi Rice Station, five females and two males, 26 July 1989, A.T. Barrion. **INDONESIA:** Yogyakarta, Kerang Anon, eight females and three males, 22 August 1989. **BANGLADESH:** Joydevpur, Dacca, six females and five males, October 1984, A.T. Barrion. **VIETNAM:** Tien Gian Prov., Cai Lay, ten females and four males, 18 August 1990, A.T. Barrion. **CAMBODIA:** Takeo Prov., Bati, 16 females, ten males, and 14 immatures, 18–19 October 1989, H. Rapusas and J. Bandong.

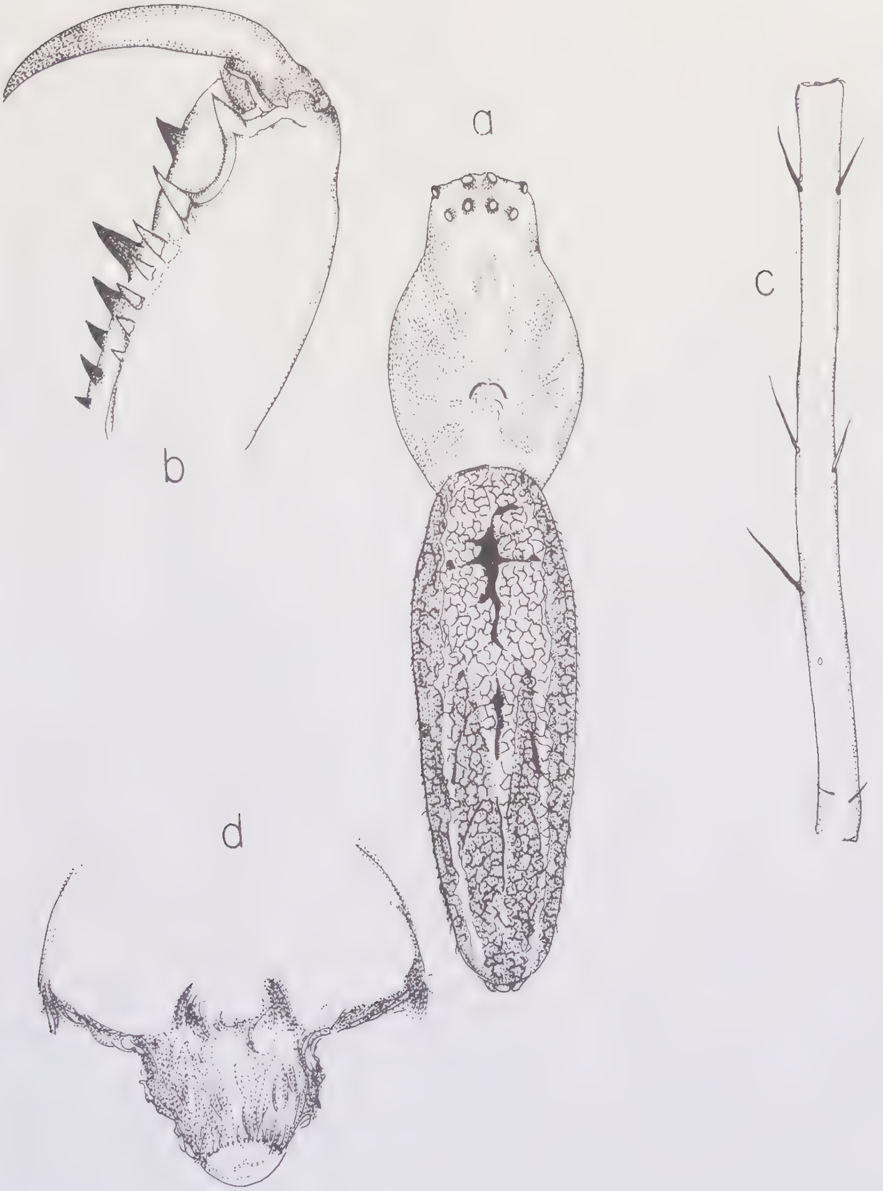


Fig. 309. Female *Tetragnatha vermiformis* Emerton (a); ventrolateral view of left chelicera (b); tibia I (c); and epigynal fold (d).

LAOS: Vientiane, five females and three males, 28 September 1991, H. Rapusas.

Distribution: Bangladesh (new record), Sri Lanka, Thailand, Cambodia (new record), Laos (new record), Vietnam (new record), Malaysia, Philippines and Indonesia.

Remarks: *T. virescens* Okuma is as common as *T. javana* (Thorell) in all the collection localities throughout the Philippines.

Tetragnatha vermiformis Emerton
(Figs 309a–d, 310a–h)

Tetragnatha vermiformis Emerton, 1884. Trans: Connect. Acad. Sci. 6: 333.

T. mackenzie Gravely, 1921. Res. Ind. Mus. 22: 438; Barrion and Litsinger, 1984. Philipp. Entomol. 6(1): 24.

T. shikokiana Yaginuma, 1960. Spiders of Japan in Color: 74.

Redescription:

Female (Fig. 309a–d): Total length 7.40 mm. Cephalothorax brown-yellow, except black eye margins, cephalic area parallel-sided and gradually sloping to thorax, fovea deep with a pair of C-shaped reddish brown marks. Eight eyes in two rows, longer AE row (0.85 mm) less recurved than the shorter PE row (0.68 mm). Eye diameter (mm): AME = 0.11, PME = 0.10, PLE = 0.08, ALE = 0.07. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.23, ALE–PLE = 0.18, PME–

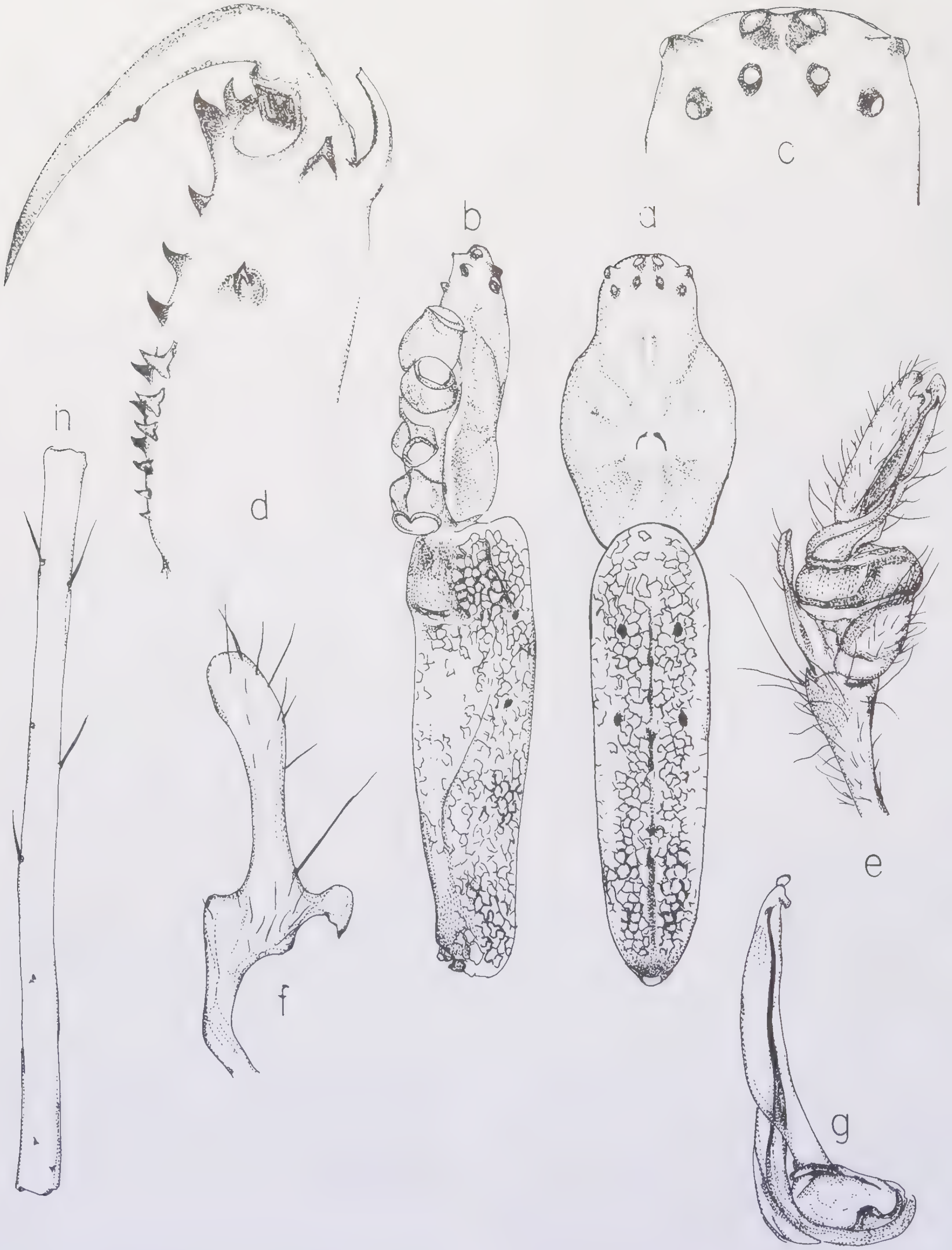


Fig. 310. Male *Tetragnatha vermiformis* Emerton, dorsal (a) and lateral (b) habitus; eye pattern (c); right chelicera (d); palpal organ (e); paracymbium (f); tip of embolus and conductor (g); and tibia I (h).

PME = 0.18, PME–PLE = 0.14. MOQ wider behind (0.35 mm) than in front (0.33 mm), both widths longer than length (0.30 mm). Clypeus height 0.73 AME diameter. Sternum yellow and longer than wide. Labium reddish brown except yellow apex, wider than long. Maxillae yellow, longer than wide, inner one half yellow and outer one half brownish yellow. Chelicerae slightly more than one half length of carapace. Promargin bears six teeth and seven in retromargin. Fang without excrescence or spur. Legs long and slender, yellowish brown. Spination in femur I = 2-0-3-2, tibia I = 1-0-3-3, metatarsus I = 1-0-1-1, femur IV = 4-0-1-1, tibia IV = 1-0-2-2, and metatarsus IV = 1-0-2-2. Tibia I slightly longer than metatarsus I, just like tibia II to metatarsus II. Metatarsus I/tarsus I = 4.04. Leg formula 1243. Pedipalp yellow with a single-clawed tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.20	1.00	5.30	5.25	1.30	18.05
2	3.60	0.85	3.30	3.20	0.85	11.80
3	1.70	0.50	1.25	1.30	0.50	5.25
4	4.00	0.60	3.10	3.30	0.70	11.70
Pedipalp	0.90	0.35	0.65	–	0.90	2.80

Abdomen widest at midlength, yellowish green, similar to *T. virescens* Okuma. Abdominal tip rounded, not exserted beyond spinnerets. Epigynal fold relatively short, distal fold wider than long, with a truncate tip.

Male (Fig. 310a–h): Total length 9.20 mm. Cephalothorax 3.60 mm long, 2.20 mm wide, 1.40 mm high. Abdomen 5.60 mm long, 1.50 mm wide, 1.60 mm high. Cephalothorax and eye pattern as in female except measurements. AE longer than PE row. Eye diameter (mm): AME = 0.15, PME = PLE = ALE = 0.10. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.38, ALE–PLE = 0.34, PME–PME = 0.23, PME–PLE = 0.20. MOQ almost a square, anterior width just slightly shorter than length. Clypeus height 1.53 times AME diameter. Sternum, labium, and maxillae similar to female. Chelicerae almost as long as carapace length. Promargin with eight teeth, excluding locking apophysis, with a slight cleft in lateral view. Retromargin has seven teeth. Fang with a cusp slightly off midlength. Legs yellowish brown, long, and slender. Spination in femur I = 1-0-3-2, tibia I = 1-0-3-3, metatarsus I = 1-0-1-1, femur IV = 4-0-1-1, tibia IV = metatarsus IV = 1-0-2-2. Leg formula 1243. Pedipalp yellow, bulb strongly transverse, tip of embolus and conductor hooked downward. Paracymbium with a slender apical one half, rather bulbous at tip, broadest at midlength, with an apically rounded prolateral process.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	8.50	1.35	8.90	9.25	1.80	29.80
2	6.30	1.20	5.90	5.70	1.20	20.30
3	2.80	0.70	2.00	2.30	0.70	8.50
4	6.30	0.95	5.25	5.50	0.90	18.90
Pedipalp	1.85	0.50	0.60	–	1.20	4.15

Abdomen similar in color to *T. virescens* but shorter size and abdominal tip rounded and not exserted beyond spinnerets.

Natural history: The specimens were collected by D-Vac suction machine from ricefields in August. A young male was taken from a legume field in February.

Material examined: PHILIPPINES: *Luzon Is.*, Pangasinan Prov., Manaoag, one young male, 3 February 1978, J. Bandong; *Panay Is.*, Iloilo Prov., Oton, two females and one male, 6 August 1978, A.T. Barrion; one female and one male, 24 August 1978, M. Lumaban.

Distribution: India, Bangladesh, Sri Lanka, Burma, Thailand, Malaysia, Philippines, China, Korea, Japan and USA.

Tetragnatha okumae new species

(Fig. 311a–p)

Description:

Male: Total length 6.48 mm. Cephalothorax 2.20 mm long, 1.28 mm wide, 1.20 mm high. Abdomen 4.28 mm long, 1.12 mm wide, 1.12 mm high. Cephalothorax dirty, brown, with black eye margins, yellow tinges around the black eye rims of LE, fovea nearly a circular groove with a grayish band anteriorly or basad of U-shaped cephalic area, cephalic area slightly elevated and narrower than the thoracic area, the latter broadest above coxa II. Eight eyes in two rows, strongly recurved AE row shorter (0.90 mm) than the lightly recurved PE row (1.10 mm). Eye diameters (mm): PME = 0.12, AME = 0.10, PLE = 0.08, ALE = 0.06. PME–PME separation 2.2 times PME diameter and equal to PME–PLE separation. AME-AME separation 1.2 times AME diameter. AME–ALE separation 4.3 times ALE and 2.6 times AME diameter. Median ocular quadrangle 1.6 times wider behind (0.50 mm) than in front (0.32 mm). Clypeus height one ALE diameter, lateral margins with a small hump, creating a slight groove below ALE. Sternum brown, longer than wide, coxae well separated from each other by lateral and posterior extensions, distal end procurved, with lateral apophysis. Labium wider (0.38 mm) than long (0.34 mm), broadest basally, brown except yellow round apical border, proximal end slightly procurved. Maxillae yellow-brown, inner lateral portion yellow and outer lateral one half brown, 3.2 times longer than broad, apical one thirds curved outwards, and basal two thirds almost parallel-sided. Scopulae and serrulae similarly prominent. Chelicerae projected forward, promargins each bear seven teeth, apical one third of first largest tooth (T) slightly vertical, slanted tooth (sl) curved downwards, a tooth (t) present above median of slanted tooth (sl) and laterally bifid and forwardly projected apophysis (a). Fangs sickle-shaped, with inner basal portions above fang bases recurved and serrated thereafter, reaching basal tooth of promargin when folded. Legs long and slender, yellow, except brown spines and gray apices of

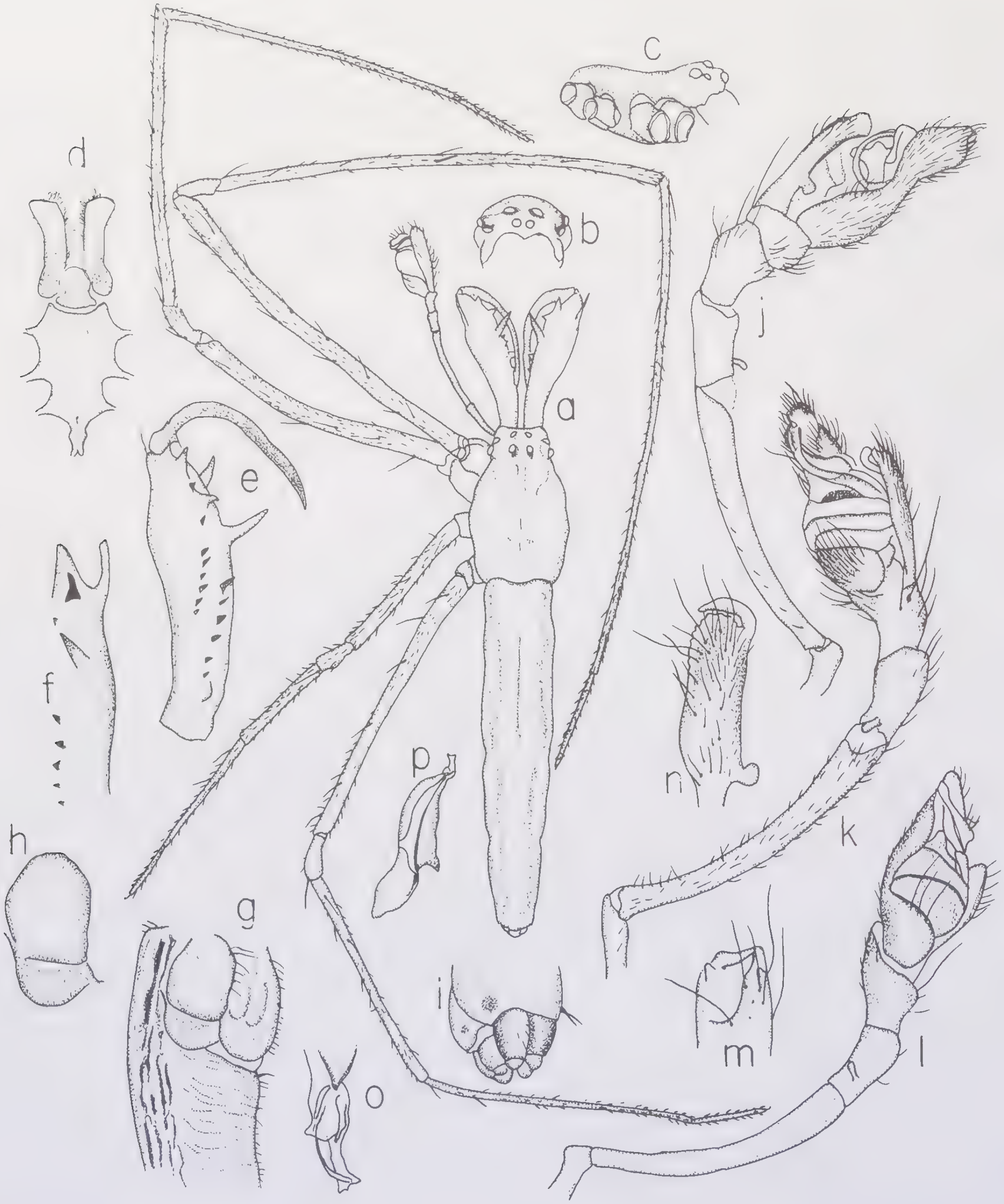


Fig. 311. Male *Tetragnatha okumae* n. sp. (a); frontal view of head (b); side view of carapace (c); sternum, labium, and maxillae (d); ventrolateral (e) and lateral (f) view of cheliceral teeth; lateroventral part of abdomen (g); book lung (h); posterolateral tip of abdomen (i); prolateral (j), retrolateral (k), and ventral (l) views of pedipalp; apex of pedipalp's tibia (m); paracymbium (n); and tip of embolus and conductor (op).

metatarsi and tarsi, spination formula: femora I = 1-0-6-4, II = 2-0-4-2, III = 2-0-0-0, IV = 4-0-2-0, tibiae I = 1-0-4-4, II = 1-0-2-3, III = 0-0-0-0, IV = 1-0-1-2, tarsi three-clawed. Ratio of femur I length/cephalothorax length = 3.3, tibia I/cephalothorax length = 3.5, total length of leg I/cephalothorax length 11.5. Leg formula 1243. Pedipalps yellow with brownish tarsus, trochanter rather long, ca. 0.4 of femur, femur curved above apical midhalf, each with a spike-like apophysis near distal end and lyriform organs ventrally and dorsally, posterior to a short distal apophysis, each lyriform organ with four to six ridges, patella with a similar spike-like apophysis near basal end, tibia with a long brown seta, paracymbium with 15 teeth, teeth 9, 10 and 11 the largest, sickle-shaped apophysis reaching the eighth tooth of paracymbium, tip of conductor trifid.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.17	1.00	7.67	8.04	1.50	25.38
2	4.42	0.75	4.00	4.25	0.83	14.25
3	1.92	0.50	1.25	1.58	0.58	5.83
4	4.42	0.63	3.75	4.17	0.92	13.89
Pedipalp	1.38	0.35	0.45	–	0.98	3.16

Abdomen brown, with scattered white patches and longitudinal gray bands and striations toward lateral margins, long, and indented twice below midhalf towards posterior end, narrowed proximally and broad distally, laterals of abdomen with four or five grayish black longitudinal stripes and silvery white spots opposite each spinneret, venter greyish with yellow tinges, brown book lungs longer (0.64 mm) than wide (0.36 mm), ratio of book lung to body length 0.1. Spinnerets partly visible dorsally at tip of abdomen, anterior pair much longer than the posterior pair.

Etymology: The species is dedicated to Dr C. Okuma from Kyushu University, Fukuoka, Japan.

Natural history: Handpicked while resting in a drying wetland rice leaf at ca. 1130 hours in October. No web was observed.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Brookes Point, Paungonvilla, holotype male, 1 October 1987, A.T. Barrion.

Distribution: Philippines.

***Tetragnatha iwahigensis* new species**
(Fig. 312a–k)

Description:

Male: Total length 9.64 mm. Carapace 3.20 mm long, 1.88 mm wide, 1.84 mm high. Abdomen 6.44 mm long, 1.36 mm wide, 1.40 mm high. Cephalothorax brown, to dark brown with black eye surrounds, except AME, and blackish brown lateral edge of clypeus, cephalic area elevated and darker brown than the thorax, thoracic groove partly deep, creating a moderately elevated hind thorax. Eyes in two recurved rows, strongly recurved AE shorter than slightly recurved PE (1.36 : 1.52 mm). Eye diameter (mm): AME = 0.14, PLE = 0.12, PME = 0.10, ALE = 0.08. Eye separation: AME one eye diameter, AME–ALE three times AME diameter, PME four times eye diameter, PME–PLE 4.2 times PME or 3.5 times PLE diameter. MOQ 1.43 times wider behind than in front (0.42 : 0.60 mm). LE on a tubercle separated by one PME diameter, creating a groove underneath between ALE and clypeus. Clypeus height less than one AME, subequal to one PME diameter. Sternum yellowish gray, longer than broad (1.60 : 1.04 mm), with lateral and posteral extensions separating coxae, apical end very slightly concave, with lateral apophysis. Labium bell-shaped, as long as broad (0.52 : 0.52 mm), broad basal one fourth dark brown, grayish yellow thereafter, and rounded apical margin yellow. Maxilla yellow brown, three times longer than broad (1.32 : 0.44 mm), median ridge distinct and ca. 0.73 of maxilla length, outer lateral margins almost straight, except apical one third projected apicolaterally, serrula and scopulae as in *Tetragnatha*. Chelicera reddish brown, large and projected forward, promargin with seven teeth, excluding the bifid to trifid first largest tooth (T), laterally slanting tooth (sl), upwardly directed tooth (t) closer to sl than to the bifid apophysis (a); retromargin with eight teeth, including the auxilliary fang guide (AX1) and the guide tooth (G). Legs long and slender, yellow-brown with light grey bases and apices of leg segments. Spination in femora I = 2-0-5-5, II = 1-0-3-5, III = 2-0-0-0, IV = 4-0-3-2; tibiae I = 1-0-6-5, II = 2-0-2-2, III = 0-0-1-0, IV = 3-0-2-2; metatarsi I and II = 1-0-1-1, III = 1-0-1-0, IV = 1-0-3-1, femur I with 11 trichobothria in two rows (eight and three) below second dorsal spine. Ratio of femur I length/cephalothorax = 2.92, tibia I/cephalothorax = 3.02, total length of leg I/cephalothorax = 10.42, tarsus three-clawed. Leg formula 1423. Palp yellow except brown tarsal structures, lyriform organs in femur and patella with eight ridges each, tibia with six trichobothria, paracymbium with 18 teeth in its serrated lateral margin and two brown hairs in the basal one third of the sickle-shaped apophysis, tip of conductor bifid.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	9.33	1.44	9.67	11.11	1.78	33.33
2	5.89	1.00	5.44	6.33	0.33	18.99
3	2.61	0.67	1.78	2.33	0.78	8.17
4	6.56	0.88	5.00	6.11	1.11	19.66
Pedipalp	2.04	0.56	0.84	–	1.20	4.64

Abdomen yellow-brown, with a long brown sword-like band dorsomedially, anteriorly broad and narrowed posteriorly, anterior portion (cardiac area) yellow with a pair of inverted C-shaped brown marks basad of cardiac area, dorsolateral grayish and ridged, laterals with three or four corrugated longitudinal lines and white marks opposite spinnerets, a small dot and a big white spot opposite anterior and a diagonal white band opposite posterior spinnerets, tip of abdomen curved downwards in lateral view, venter yellow with brown book lungs.

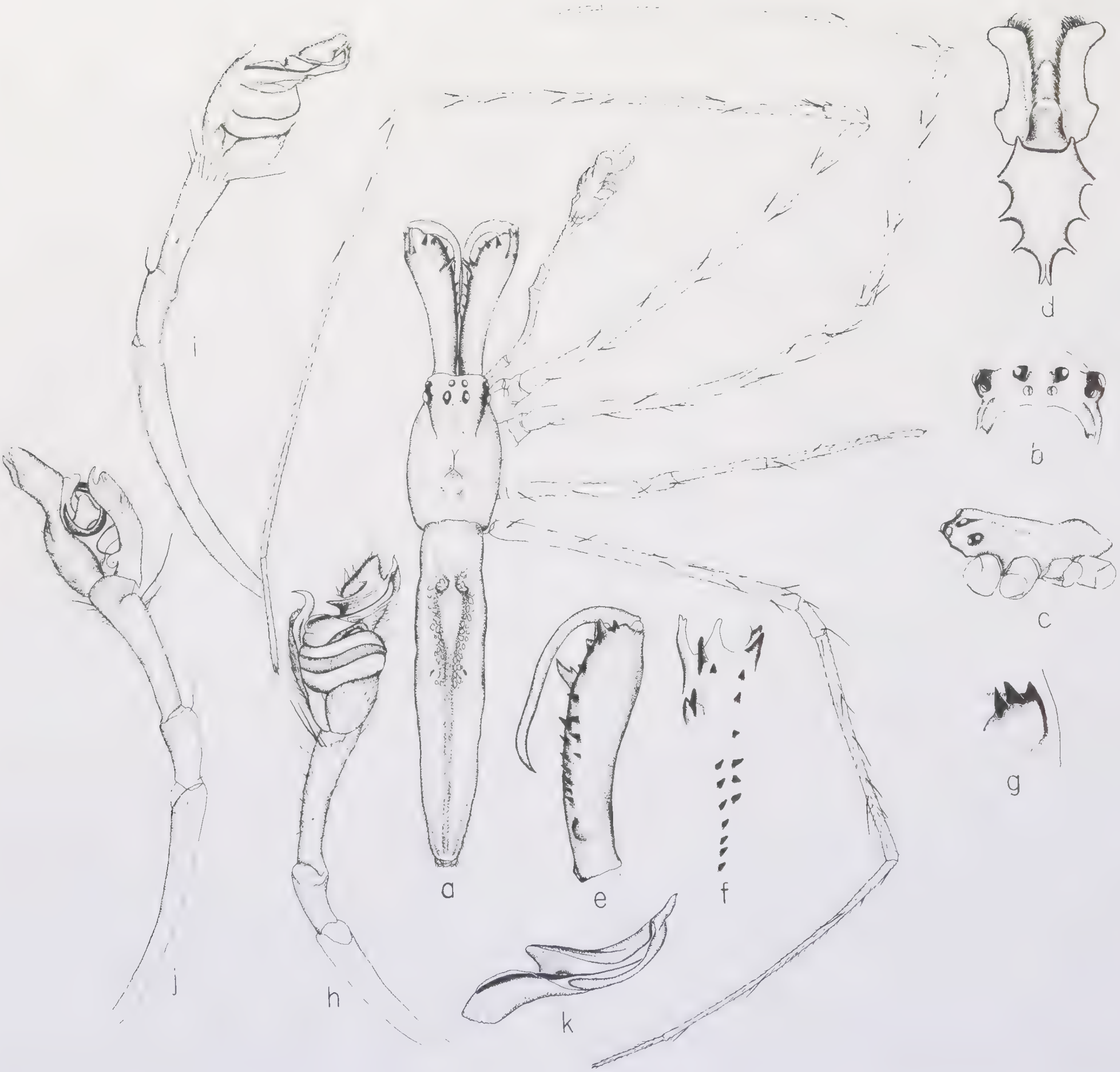


Fig. 312. Male *Tetragnatha iwahigensis* n. sp. (a); frontal view of head (b); side view of carapace (c); sternum, labium, and maxillae (d); ventral view of left chelicera (e); lateral view of teeth (f); trifid promargin with tooth (g); ventral (h) and lateral (ij) views of pedipalp; and tip embolus and conductor (k).

Book lungs longer than broad (0.90 : 0.68 mm), ratio of book lung to body length 0.09. Spinnerets not visible dorsally, projected diagonally outward, with terminal segments slightly converging.

Natural history: The holotype male was collected from a grass *Fimbristylis* sp. growing in a weedy 40 DT ricefield in July. No web was observed, the spider simply at rest in the weed with two anterior legs stretched forward and two posterior pairs backward.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Iwahig Penal Colony, holotype male, 25 July 1985, A.T. Barrion.

Distribution: Philippines.

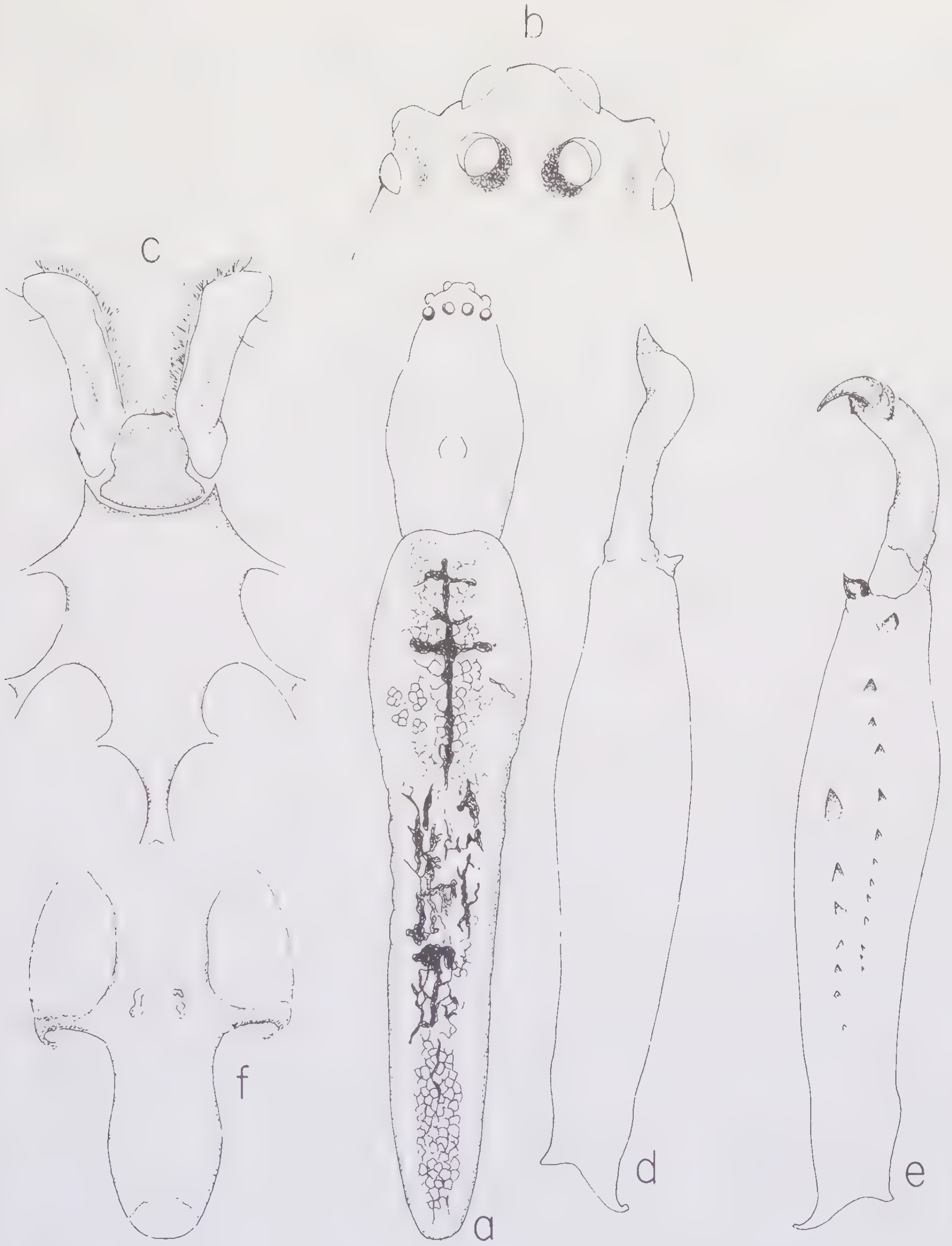


Fig. 313. Female *Tetragnatha maxillosa* Thorell (a); eye pattern (b); sternum, labium, and maxillae (c); dorsal (d) and ventral (e) view of left chelicera; and epigynal fold (f).

Tetragnatha maxillosa Thorell
(Figs. 313a–f, 314a–i)

Tetragnatha maxillosa Thorell, 1895. Descr. Catal. Spid. Burma: 139.

T. mandibulata Thorell, 1890. Ann. Mus. Civ. Genova 28: 221.

T. japonica Boesenberg et Strand, 1906. Abh. Senckenbg. Ges. 30(1–2): 177.

T. listeri Gravely, 1921. Rec. Ind. Mus. 22: 443.

T. cliens Chamberlin, 1924. Proc. U.S. Nat. Mus. 63(13): 12.

T. propioides Schenkel, 1936. Ank. Zool. 29: 89.

Redescription:

Female (Fig. 313a–f): Total length 9.60 mm. Cephalothorax 2.60 mm long, 1.50 mm wide, 1.00 mm high. Abdomen 7.00 mm long, 1.50 mm wide, 1.90 mm high. Cephalothorax brownish yellow and black around eye margins, moderately high at both ends of fovea seen laterally. Eight eyes in two rows, slightly recurved AE row shorter (0.80 mm) than the straight PE row (0.85 mm). Eye diameter (mm): PME = 0.15, AME = 0.14, PLE = 0.11, ALE = 0.08. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.10, ALE–PLE = 0.08, PME–PME = PME–PLE = 0.13. MOQ wider behind (0.40 mm) than in front (0.36 mm), anterior

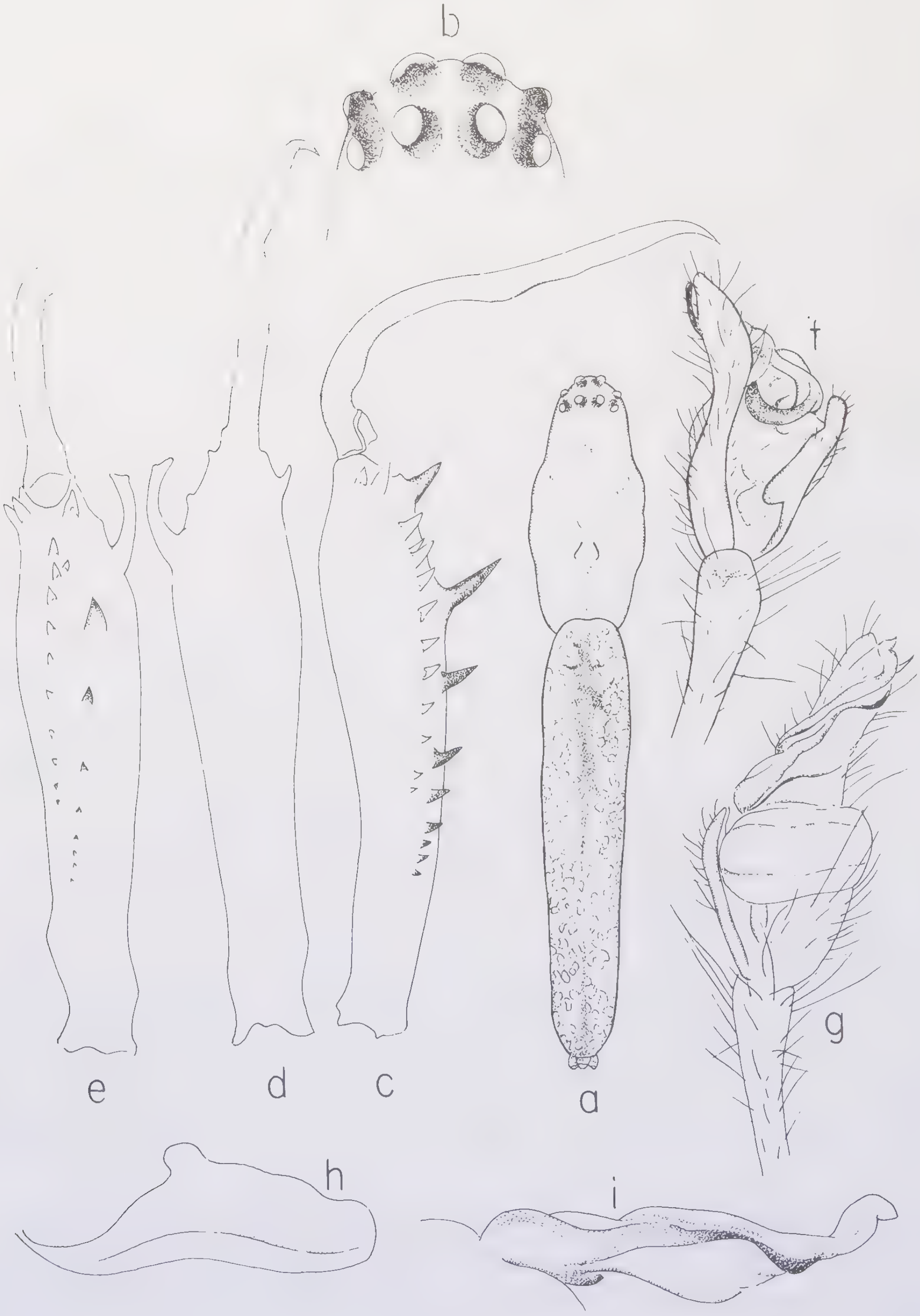


Fig. 314. Male *Tetragnatha maxillosa* Thorell (a); eye pattern (b); dorsal (c), lateral (d), and ventral (e) views of right chelicera; retrolateral (f) and ventral (g) views of pedipalp; paracymbium (h); and tip of embolus and conductor (i).

width slightly longer than length (0.35 mm). Clypeus height almost one AME diameter (0.13 mm). Sternum yellow-brown, 1.89 times longer than wide, extended laterally and posteriorly beyond coxae IV. Labium dark reddish brown, except yellow apex, wider than long. Maxillae brownish yellow, longer than wide, expanded at both outer lateral ends and straight in between. Chelicerae shorter than carapace, bearing seven promarginal and nine retromarginal teeth. Promarginal guide tooth (Gu) and T widely separated, space in between enclosing four retromarginal teeth viewed dorsally. Fang without cusp or excrescence. Legs long and slender, yellowish brown, with dark brown apices of leg segments in some specimens. Spination in femur I = 1/2-0-5/6-2, tibia I = 2-0-3-3/4, metatarsus I = 1-0-1-1, femur IV = spineless, tibia IV = 1-0-2-1, metatarsus IV = 1-0-2-1. Metatarsus I/tarsus I = 4.24–4.96. Leg formula 1243. Pedipalp 0.4 length of femur, tarsus with a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.50	1.00	7.40	8.10	1.65	25.65
2	4.60	0.75	4.00	4.40	1.00	14.75
3	2.30	0.40	1.40	1.80	0.65	6.55
4	4.75	0.60	3.50	3.90	0.95	13.70
Pedipalp	1.00	0.35	0.70	–	1.05	3.10

Abdomen brownish yellow, widest anteriorly and narrowly rounded posteriorly, usually four or more times longer than wide, distal end not exserted beyond spinnerets. Epigynal fold long, distal fold 1.46 times longer than broad, longer than the book lungs, anterior opening almost circular. Distal fold often swollen towards apex, bears a pair of subglobular brown spots at midlength and a pair of brown bands in line with book lungs.

Male (Fig. 314a–i): As in female except body and leg lengths, eye diameter, and pedipalp. Total length 6.80 mm. Cephalothorax 2.40 mm long, 1.50 mm wide, 1.00 mm long. Abdomen 4.40 mm long, 1.40 mm wide, 1.10 mm high. Eight eyes in two rows, recurved AE (0.56 mm) slightly shorter than straight PE row (0.58 mm). Eye diameter (mm): AME = AME = 0.10, PLE = 0.09, ALE = 0.06. Eye separation (mm): AME–AME = AME–ALE = 0.08, PME–PME = PME–PLE = 0.10, ALE–PLE = 0.09. MOQ slightly wider behind (0.30 mm) than in front (0.28 mm), posterior width as long as length. Clypeus height 1.3 times AME diameter. Sternum, labium, and maxillae as in female. Chelicerae as long as to longer than carapace. Locking apophysis bifurcate viewed laterally, t small, just anterior of locking apophysis. Promarginal guide tooth well separated from T, space between enclosing about two or three teeth of retromargin. Promargin bears eight teeth, excluding a and t. Retromargin has 10–11 teeth. Legs yellowish brown, long, and slender. Spination in femur I = 2-0-6/7-2, tibia I = 2-0-3-3, metatarsus I = 1-0-1-1, femur IV = 0/1-0-1-0, tibia IV # 1-0-2-2, metatarsus IV = 1-0-2-1. Metatarsus I/tarsus I = 3.50–4.53. Leg formula 1243. Pedipalp almost as long as tibia II. Paracymbium strongly concave on basoprolateral side, its process projected posterolaterad, apex rounded, inner half smooth, without hairs, and lightly sclerotized. Tip of conductor and embolus partially twisted and sickle-shaped.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.30	0.65	5.40	5.70	1.60	18.65
2	3.20	0.50	2.90	3.00	0.95	10.55
3	1.65	0.30	1.05	1.20	0.55	4.75
4	3.60	0.40	2.70	2.95	0.85	10.50
Pedipalp	0.90	0.30	0.43	–	0.65	2.28

Abdomen elongately yellow-brown, moderately wider anteriorly than posteriorly. Abdominal tip rounded anterior to spinnerets in lateral view.

Natural history: One of the most common *Tetragnatha* spp. in all types of ricefields in South and Southeast Asia, abundant during the vegetative stage of the crop.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Iraga, six females, two males, and 12 immatures, 21 September 1981, A.T. Barrion; Nueva Viscaya Prov., Bongabong, 38 females, 22 males, and 26 immatures, 23 September 1989, G.B. Aquino; Nueva Ecija, Cabanatuan, Sto. Domingo Vill., ten females, six males, and three immatures, 15 September 1978, A.T. Barrion; Laguna Prov., Los Baños, 82 females, 31 males, and 102 immatures, July–August 1981, M. Perez; Quezon Prov., Real, Llavac Vill., three females and two males, 12 July 1984, M. Perez and B. Garcia; Camarines Norte Prov., Daet, 18 females and two immatures, 31 August 1988, A.T. Barrion; Camarines Sur Prov., Naga, 12 females, six males, eight immatures, 31 August 1988, A.T. Barrion; Sorsogon Prov., Sorsogon, 15 females, six males, and eight spiderlings, 31 August 1988, A.T. Barrion and M. Perez; *Leyte Is.*, Leyte Prov., Palo, two females and one male, 15 July 1985, A.T. Barrion; Baybay, Visca area, eight females, one male, and two subadult males, 16 July 1985, A.T. Barrion; Ormoc, eight females and three spiderlings, 16 July 1985, A.T. Barrion; *Cebu Is.*, Bago, six females and three males, 24 April 1980, A.T. Barrion; Cebu City, one female and 12 immatures, 10 April 1981, R. Apostol; Toledo, ten females and two males, March 1984, E. Enriquez; *Panay Is.*, Iloilo Prov., Oton, 217 females, 38 males, and 106 immatures, July–August 1979, M.D. Lumaban; Capiz Prov., Dumarao, Astorgas Vill., five females, 17 February 1981, A.T. Barrion; *Mindanao Is.*, South Cotabato Prov., 114 females, 88 males, and 208 immatures, 5 January 1982, H. Corpuz and N. Velasco; Lake Sebu, 114 females and 31 males, 3 March 1983, A. Alviola; Agusan del Sur, Del Monte, 38 females, ten males, and 12 immatures, 12–13 July 1979, A.T. Barrion; Bukidnon Prov., Pangantukan, 39 females, 12 males, and 107 immatures, 9–10 July 1979, E. Galindo; Misamis Oriental, Claveria, 78 females, 37 males, and 18 immatures, 9 October 1985, A.T. Barrion and E. Libetario.

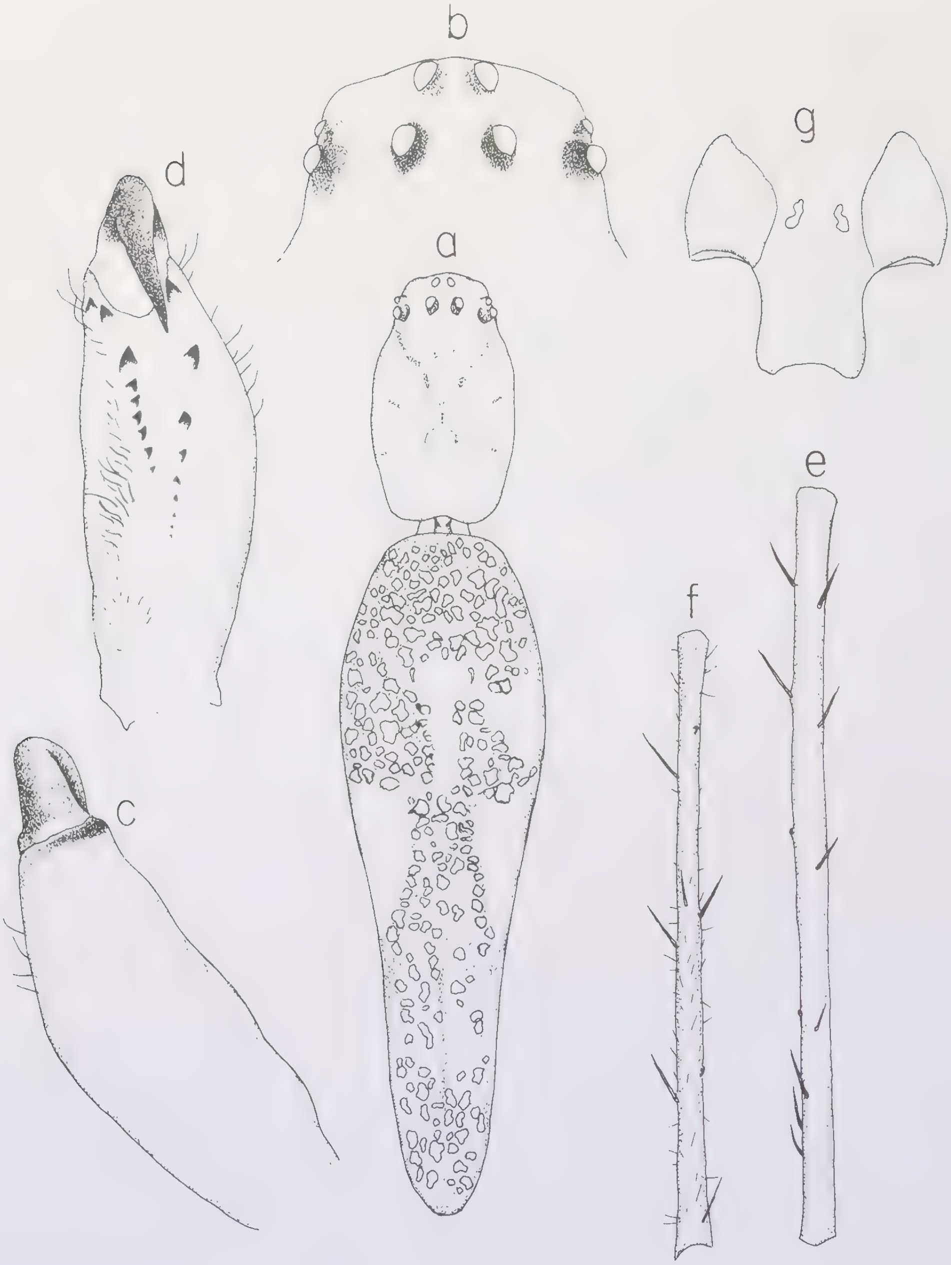


Fig. 315. Female *Tetragnatha ceylonica* Cambridge (a); eye pattern (b); lateral (c) and ventral (d) views of chelicera; femur I (e) dorsal view of femur I (e) and tibia I (f); and epigynal fold (g).

BANGLADESH: Dacca, Joydevpur, two females and two males, October 1984, N.Q. Kamal. **THAILAND:** Prachinburi Prov., Prachinburi, 12 females, four males and eight immatures, 27 July 1989, A.T. Barrion. **VIETNAM:** Hanoi, PRRI, five females, 6 August 1990, A.T. Barrion; Sang Phuong Vill., eight females and three males, 9 August 1990, A.T. Barrion; Tien Giang Prov., Long Dinh, 15 females and five males, 16–17 August 1990, A.T. Barrion. **CAMBODIA:** Takeo Prov., Bati, 88 females, 15 males, and 61 immatures, 18–26 October 1989, J. Bandong and H. Rapusas; Suay Peng, Ta Saang, 21 females and 12 immatures, 18–26 October 1989, H. Rapusas and J. Bandong. **INDONESIA:** Central Java, Blabak, 24 August 1989, A.T. Barrion; Yogyakarta, Kaliurang, eight females and four males, 21 August 1989; Klaten, Kerang Anon, 23 females, 12 males, and eight immatures, 22 August 1989, A.T. Barrion.

Distribution: India, Bangladesh, Sri Lanka, Myanmar, Thailand, Loas, Cambodia, Vietnam, Malaysia, Indonesia, Philippines, China, Taiwan, Japan and South Korea.

Tetragnatha ceylonica Cambridge
(Figs 315a–g, 316a–m)

Meta gracilis Stoliczka, 1869. J. Asiat. Soc. Bengal 38: 244.
Tetragnatha ceylonica Cambridge, 1869. J. Linn. Soc. Zool. 10: 394.
T. latifrons Thorell, 1877. Ann. Mus. Civ. Genova 10: 434.
T. fronto Thorell, 1890. Ann. Mus. Civ. Genova 28: 214.
T. tridens Thorell, 1898. Ann. Mus. Cir. Genova 39: 328.
T. gracilis Pocock, 1900. Faun. Brit. Ind. Arachn.: 214.
T. eitapensis Strand, 1913. Archn. Naturg. 79: 115.
T. ceylonica Okuma, 1968. Mushi 42: 99.

Redescription:
Female (Fig. 315a–g): Total length 11.75 mm. Cephalothorax 2.95 mm long, 1.85 mm wide, 1.20 mm high. Abdomen 8.80 mm long, 3.20 mm wide, 2.90 mm high. Cephalothorax reddish brown with black eye margins, high in the narrow and distinct cephalic and thoracic area behind the deep fovea. Eight eyes in two rows, short AE row more recurved than the straight to slightly recurved PE row (1:30 : 1.40 mm). Eye diameter (mm): AME = PME = PLE = 0.13, ALE = 0.09. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.36, PME–PME = 0.31, PME–PLE = 0.33, PLE–ALE = 0.06. MOQ wider behind than in front (0.40 : 0.58 mm), anterior width and length subequal. Clypeus height as large as one AME diameter. Sternum, labium, and maxillae as in male. Chelicerae reddish brown, about 0.58 length of carapace. Promargin bears ten teeth and retromargin has eight teeth, second basal tooth bifurcate. Legs long and yellowish brown. Spination in femur I = 1-0-6-4, tibia I = 2-0-3-3, and metatarsus I = 1-0-1-2, femur IV = 2-0-1-0, tibia IV = 1-0-2-2, and metatarsus IV = 1-0-3-1. Metatarsus I/tarsus I = 5.43. Leg formula 1243. Pedipalp yellow, with a single-clawed tarsus, less than one half length of femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.00	1.35	7.10	7.60	1.40	24.45
2	4.65	1.00	3.80	4.10	0.90	14.45
3	2.30	0.55	1.40	1.70	0.60	6.55
4	4.70	0.70	3.50	4.00	0.80	13.70
Pedipalp	1.00	0.35	0.75	–	0.90	3.00

Abdomen long, about 2.75 times longer than wide, yellow-brown with silvery hues and indistinct dusky markings, relatively broader anteriorly than the posterior.
Male (Fig. 316a–m): Total length 7.43 mm. Carapace 2.66 mm long, 1.55 mm wide, 0.88 mm high. Abdomen 4.77 mm long, 1.22 mm wide, 1.12 mm high. Cephalothorax brown except light brown to black eye surrounds, cephalic area U-shaped, fovea rather recurved, thoracic region broadest above coxa II, clothed with short white hairs, posterior end notched medially. Eight eyes in two recurved rows, AE strongly recurved and PE partially recurved, PE longer than AE (1.18 : 1.02 mm), diameter in decreasing order AME = 0.13, PME = PLE = 0.10, ALE = 0.08. AME on a small ridge. AME separation 1.23 times eye diameter. AME–ALE separation twice AME separation or four times ALE diameter, LE on a distinct tubercle separated by one ALE diameter. PME separation nearly three times eye diameter and subequal to PME–PLE separation. Median ocular quadrangle wider behind than in front (0.36 : 0.52 mm). Clypeus height less than one AME diameter, subequal to one PME diameter. Sternum grayish brown, long, with extensions towards carapace separating coxae, longer than broad (1.4 : 1.1 mm), apex straight, with tubercles on both ends. Labium dark reddish brown except yellow rounded apex, wider than long (0.46 : 0.42 mm), broadest basally, lightly narrowed at lateral midhalf. Maxilla yellow, three times longer than broad, 2.5 times longer than labium, median longitudinal ridge above midlength of maxilla, outer lateral margin slightly concave medially, inner lateral margin with scopulae, distal end bears brown serrula, partially rounded with anterolateral tip projected sidewards, basal one fourth slightly elevated. Chelicera prominently projected forward, long, and moderately robust, retromargin with ten teeth, including auxiliary fang guide (AX1) and guide tooth (G), promargin with six, excluding the slanting tooth (sl), tooth (t) between sl and bifurcated apophysis (a), first largest tooth (T) projected vertically and partially inwards towards tip, fang reaching beyond midlength of chelicera, finely serrated high above second promarginal tooth, and on a level with the sixth retromarginal tooth. Legs yellowish brown, except for brown spines, long, and slender, spination in femora I = 2-0-6-3, II = 2-0-4-4, III = 2-0-0-0, and IV = 3-0-2-1, femur I with ten trichobothria in two rows (seven and three) below first basal spine of dorsum, prolateral and retrolateral without a trichobothrium in between them, basal one half of femur IV with two rows of ten (seven and three) trichobothria. Spination in tibiae I = 2-0-3-3, II = 1-0-3-2, III = 0-0-0-0, IV = 1-0-2-3, metatarsi I = 1-0-1-2, II = 1-0-1-1, III = 1-0-1-0, IV = 1-0-2-1, tarsus three-clawed. Ratio of length of femur I/cephalothorax length = 2.67, length of tibia I/length of cephalothorax = 2.74, total length of leg I/cephalothorax length = 9.42. Leg formula 1243. Palp yellow except brown cymbium and paracymbium, cymbium as long as tarsus IV and slightly longer than the paracymbium. Paracymbium three times longer than broad, inner apical part serrated with 14 teeth, distal apophysis sickle-shaped and curved partially inward. Palp's femur 3.75 times longer than patella. Tibia 1.97 times length of patella, bears six trichobothria, and with ca. 20 long hairs near distal end. Lyriform organs along distal ends of patella and femur, both file-like with six ridges.

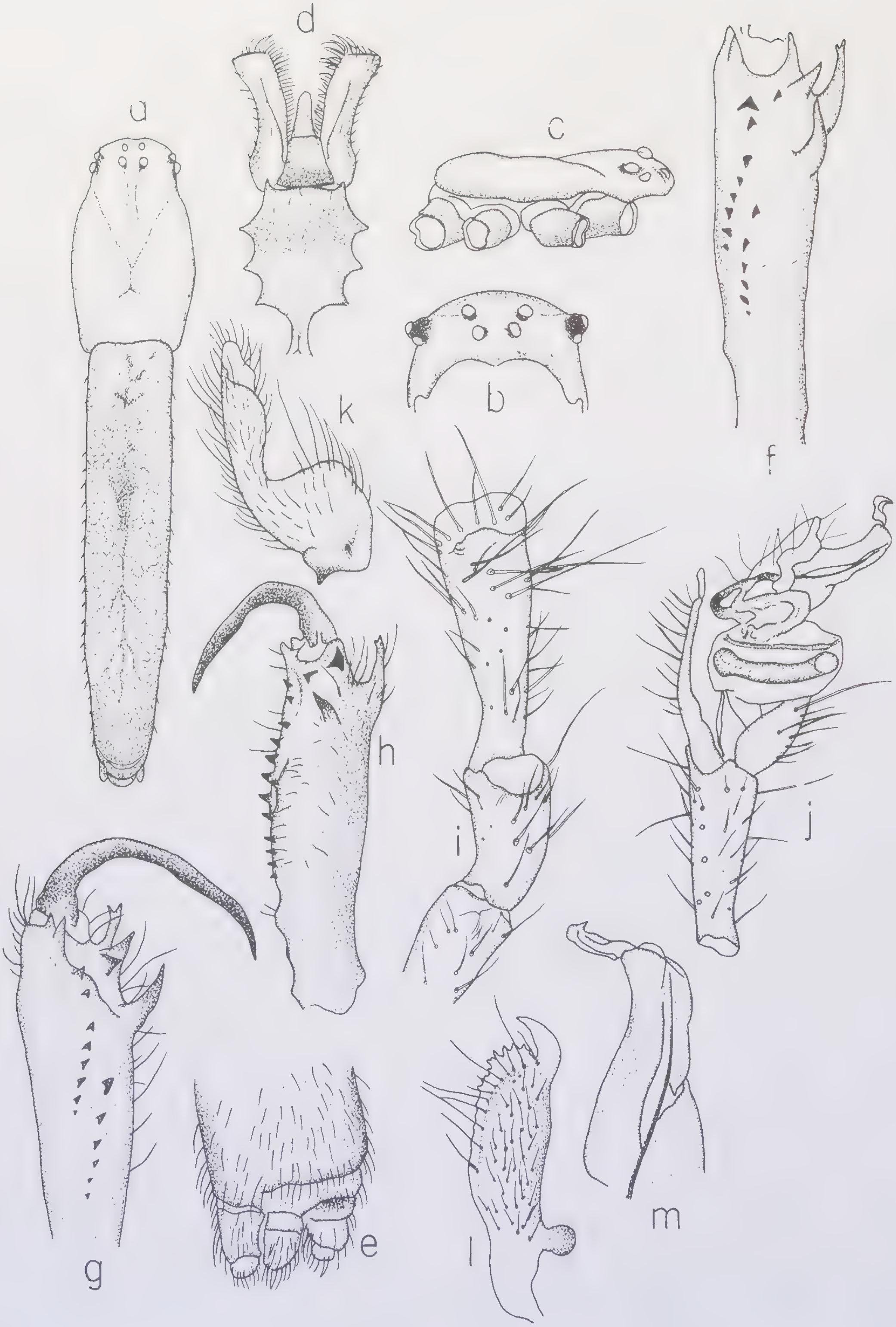


Fig. 316. Male *Tetragnatha ceylonica* Cambridge (a); frontal view of head (b); side view of carapace (c); sternum, labium, and maxillae (d); posterolateral view of abdomen (e); ventral (f), dorsal (g), and lateral (h) views of chelicera; portion of pedipalp (i); ventral view of palpal organ (j); cymbium (k); paracymbium (l); and tip of embolus and conductor (m).

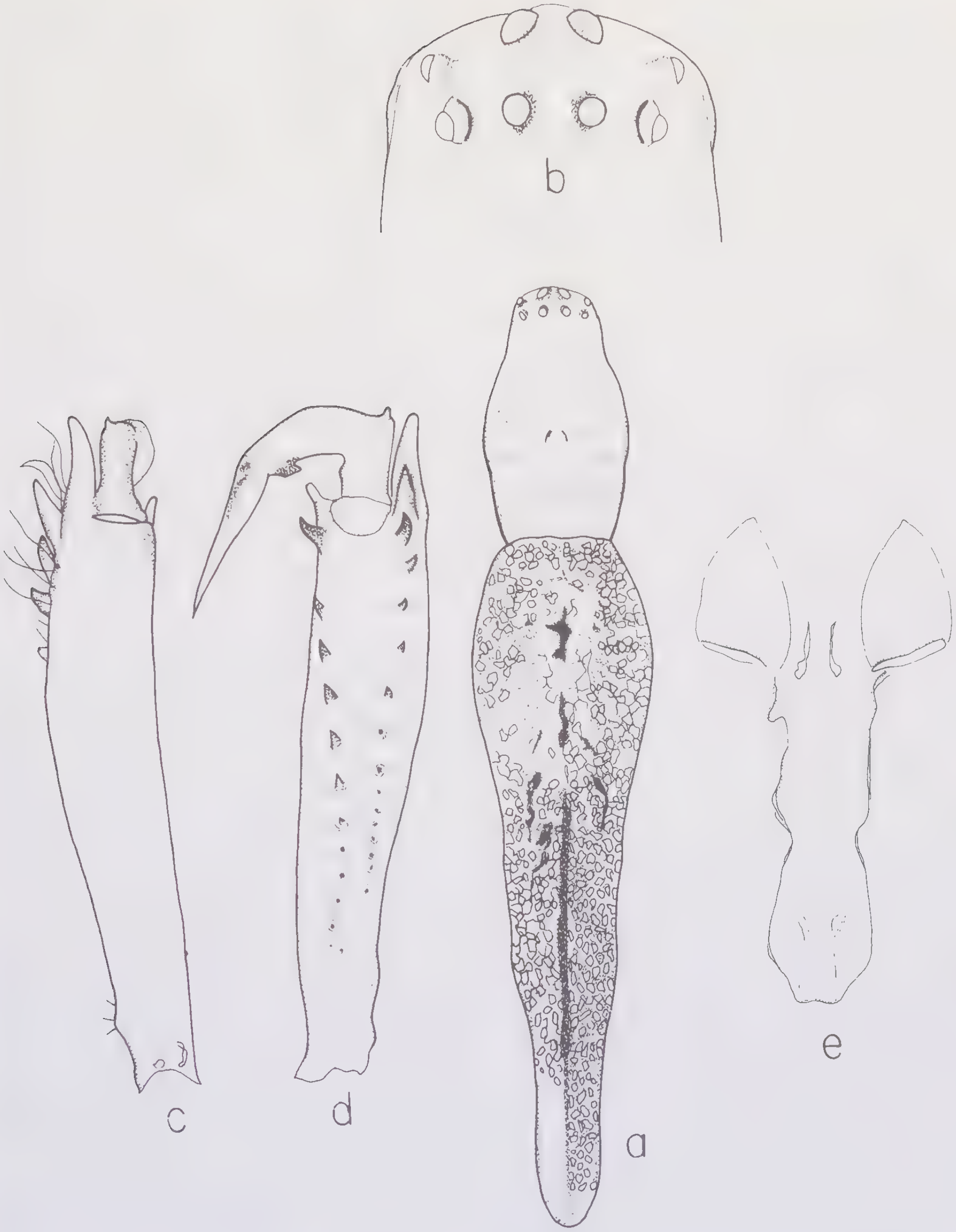


Fig. 317. Female *Tetragnatha mandibulata* Walckenaer (a); eye pattern (b); dorsal (c) and ventral (d) views of right chelicera; and epigynal fold (e).

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.11	1.11	7.30	8.00	1.55	25.07
2	4.88	0.88	4.11	4.33	1.00	15.20
3	2.11	0.44	1.22	1.77	0.66	6.20
4	4.88	0.66	3.61	4.33	0.88	14.36
Pedipalp	1.50	0.40	0.79	–	0.88	3.57

Abdomen brown and clothed with dirty white patches, lateral margins smooth, except two posterotransverse striations near spinnerets, venter brown to light brown. Basal one third of abdomen broad and straight-bodied distally. Spinnerets dark brown, subequal in length and sizes, visible above. Book lungs longer than wide (0.70 : 0.56 mm), book lung/body length ratio = 0.09.

Natural history: The specimens were collected in September, resting and mimicking a pale brown dead branch of a guava tree staked in the border of an old seedbed.

Material examined: PHILIPPINES: *Palawan Is.*, Narra, Estrella Vill., one female and one male, 29 September 1987, A.T. Barrion; *Mindanao Is.*, Zamboanga del Sur, Margosatubig, one female and one male, 9 August 1979, A.T. Barrion; *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., two males, 17 April 1981

T.J. Perfect; Quezon Prov., Real, Llavac Vill., one female and one male, 23 December 1984, R. Apostol.
Distribution: Africa, Southeast Asia and New Guinea.
Remarks: A female specimen from yellow pan trappings in slash-and-burn upland rice has an excrescence (EX) in the fang, second basal tooth of retromargin bifurcate, and posterodorsal part of abdomen bears transverse striae. Similarly, two males show bifurcate locking apophysis (a), tibia of pedipalp with about 18–20 trichobothria, paracymbium with 19–21 serrated teeth, and lyriform organs with seven ridges.

Tetragnatha mandibulata Walckenaer
(Figs 317a–e, 318a–h)

Tetragnatha mandibulata Walckenaer, 1841. Hist. Nat. Apt. 2: 211.

Redescription:
Female (Fig. 317a–e): Total length 11.10 mm. Cephalothorax 3.10 mm long, 1.60 mm wide, 1.30 mm high. Abdomen 8.00 mm long, 2.30 mm wide, 2.40 mm high. Cephalothorax brown to yellowish brown, except black eye margins. Fovea distinct and deep. Eight eyes in two rows, AE slightly shorter than PE row, both straight to slightly recurved. Eye diameter (mm): AME = 0.15, PME = 0.13, PLE = 0.10, ALE = 0.09. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.18, PME–PME = 0.20, PME–PLE = 0.19, ALE–PLE = 0.10. MOQ slightly wider behind (0.45 mm) than in front (0.43 mm), length and posterior width subequal. Clypeus height 1.2 times AME diameter. Sternum brownish yellow, similar to basal four fifths of labium, longer than wide, extended laterally and between coxae IV. Labium wider than long and apex yellow brown. Maxillae yellow, moderately large apically, longitudinal ridge present in basal midhalf. Chelicerae with 14 promarginal teeth, AXu and Gu prominent. Retromargin has 16 teeth, AXl superlarge, visible dorsally, and Gl also large. Legs long and slender, yellow brown. Spination of femur I = 4-0-6-3, tibia I = 3-0-5-4, metatarsus I = 1-0-1-1. Metatarsus I/tarsus I = 6.21. Leg formula 1243. Pedipalp yellow, tarsus single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	9.00	1.30	9.70	10.25	1.65	31.90
2	6.05	1.05	5.25	5.55	1.10	19.00
3	2.80	0.60	1.80	2.35	0.65	8.20
4	6.50	0.85	4.85	5.60	0.90	18.70
Pedipalp	1.60	0.50	1.30	–	1.30	4.70

Abdomen yellowish brown, broadest anteriorly and moderately narrowed posteriorly, terminating in a rounded tip, slightly exserted beyond spines. Epigynal fold long, distal fold 1.5–4.0 times longer than wide, a pair of elongate brown stripes present subposteriorly, in line with lung slits, and a pair of large brown spots subanteriorly, orifice convex.

Male (Fig. 318a–h): Similar to female except size, leg length and palpal organ. Total length 13.10 mm. Cephalothorax 3.77 mm long, 2.11 mm wide, 2.00 mm high. Abdomen 9.33 mm long, 1.94 wide, 2.02 mm high. Cephalothorax yellow-brown to brown except black eye margins. Cephalic region rounded anteriorly and broadest basally. Eight eyes in two rows of equal length, straight to slightly recurved. AME > PME = PLE > ALE. MOQ slightly wider behind than in front. LE closer to each other than to the medians. Clypeus height 0.18 mm, 1.2 times wider than one AME. Sternum longer than wide, labium and maxillae as in female. Chelicerae as long as carapace. Locking apophysis simple, pointed apically. Promargin bears 12–13 teeth, with a large guide tooth. Retromargin has 13–16 teeth, apical two teeth moderately close to each other. Fang with a small cusp close to base. Legs yellow, long, and slender. Spination in femur I = 4-0-7-5, tibia I = 3-0-5-3, metatarsus I = 1-0-1-1. Leg formula 1243. Pedipalp yellow, ca. one half of tibia I. Paracymbium cleft apically. Apex of conductor and embolus thin but broad and rounded at base.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.50	0.90	7.80	8.00	1.80	26.00
2	5.05	0.80	4.55	4.50	1.10	16.00
3	2.40	0.50	1.40	1.85	0.65	6.80
4	5.20	0.60	4.05	4.40	1.00	15.25
Pedipalp	1.50	0.63	0.68	–	1.10	3.91

Abdomen yellowish brown to silvery, posterior end slightly tapered upwards in lateral view above the spinnerets.
Natural history: Adults abound in the ricefields during later vegetative to maximum tillering stage. They are also found in other crops, such as corn, wheat, sorghum, and legumes.
Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Cale Vill., eight females and one male, 23 August 1977, C. de Castro; Banaderos Vill., five females, 28 August 1977, A.T. Barrion; Laguna Prov., Los Baños, two females and one male, 10 October 1977, M. Perez; Pangasinan Prov., Manaoag, Lipit Vill., two females, 15 July 1977, A.T. Barrion; *Panay Is.*, Iloilo Prov., Oton, two females, 10 November 1978, A.T. Barrion; *Palawan Is.*, Narra, four females 26 April 1979, C. de Castro and A.T. Barrion; *Mindanao Is.*, Agusan del Sur, Claveria, Patrocinio Vill., one male and two females, 24 June 1986, A.T. Barrion. **BANGLADESH:** Dacca, Joydevpur, 11 females and two males, 25 October 1985, N. Kamal. **INDIA:** Tamil Nadu, Madurai, one female, 10 April 1989, M. Venugopal. **THAILAND:** Prachinburi, two females, 27 July 1989, A.T. Barrion. **VIETNAM:** Tien Gian Prov., Cie Be, five females, 18 August 1990, A.T. Barrion. **CAMBODIA:** Takeo Prov., Bati, three females, 20 October 1989, J. Bandong and H. Rapusas.
Distribution: India, Bangladesh, Thailand, Vietnam,

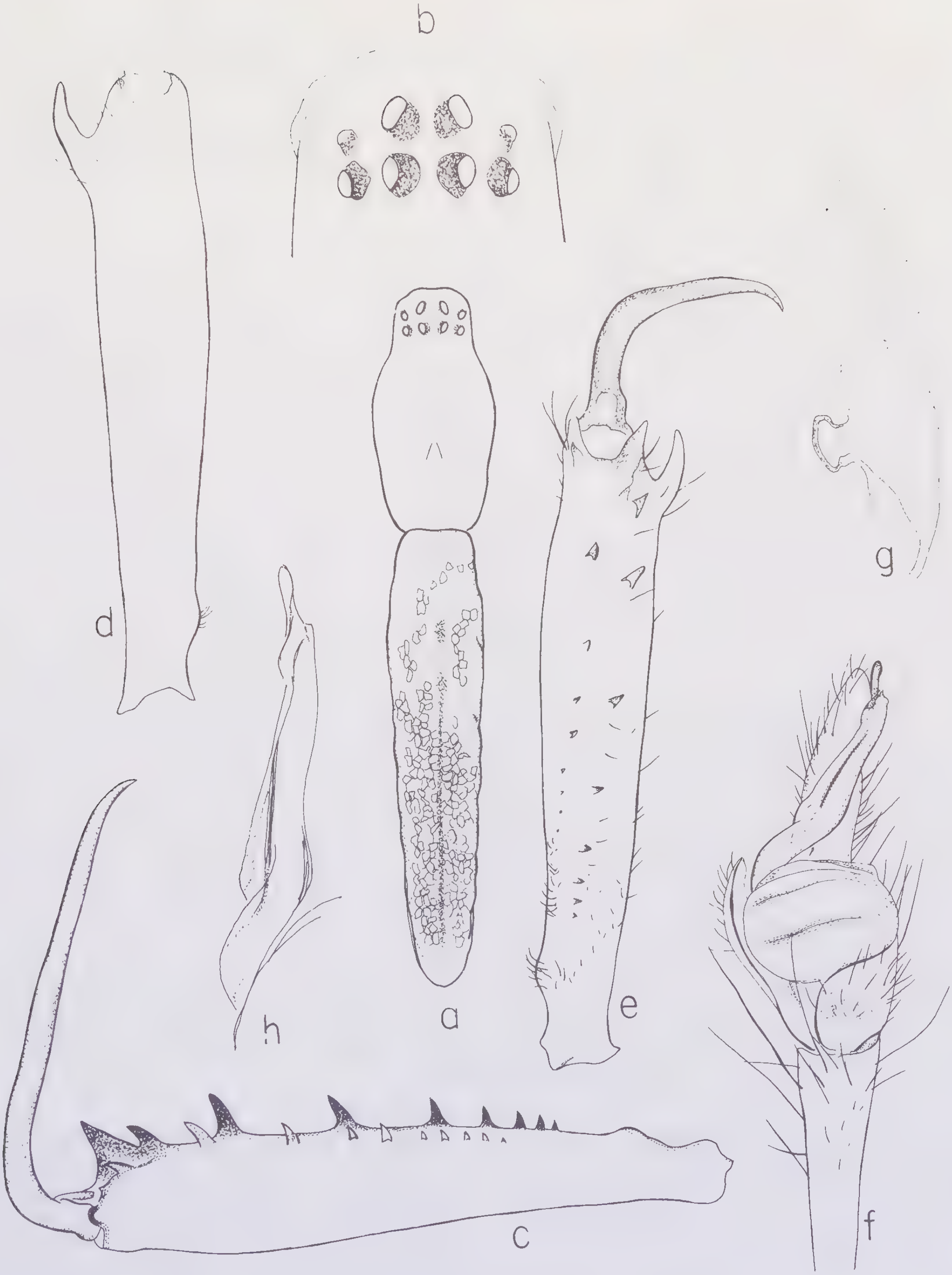


Fig. 318. Male *Tetragnatha mandibulata* Walckenaer (a); eye pattern (b); dorsal (c), lateral (d), and ventral (e) views of chelicera; retrolateral view of pedipalp (f); paracymbium (g); and tip of embolus and conductor (h).

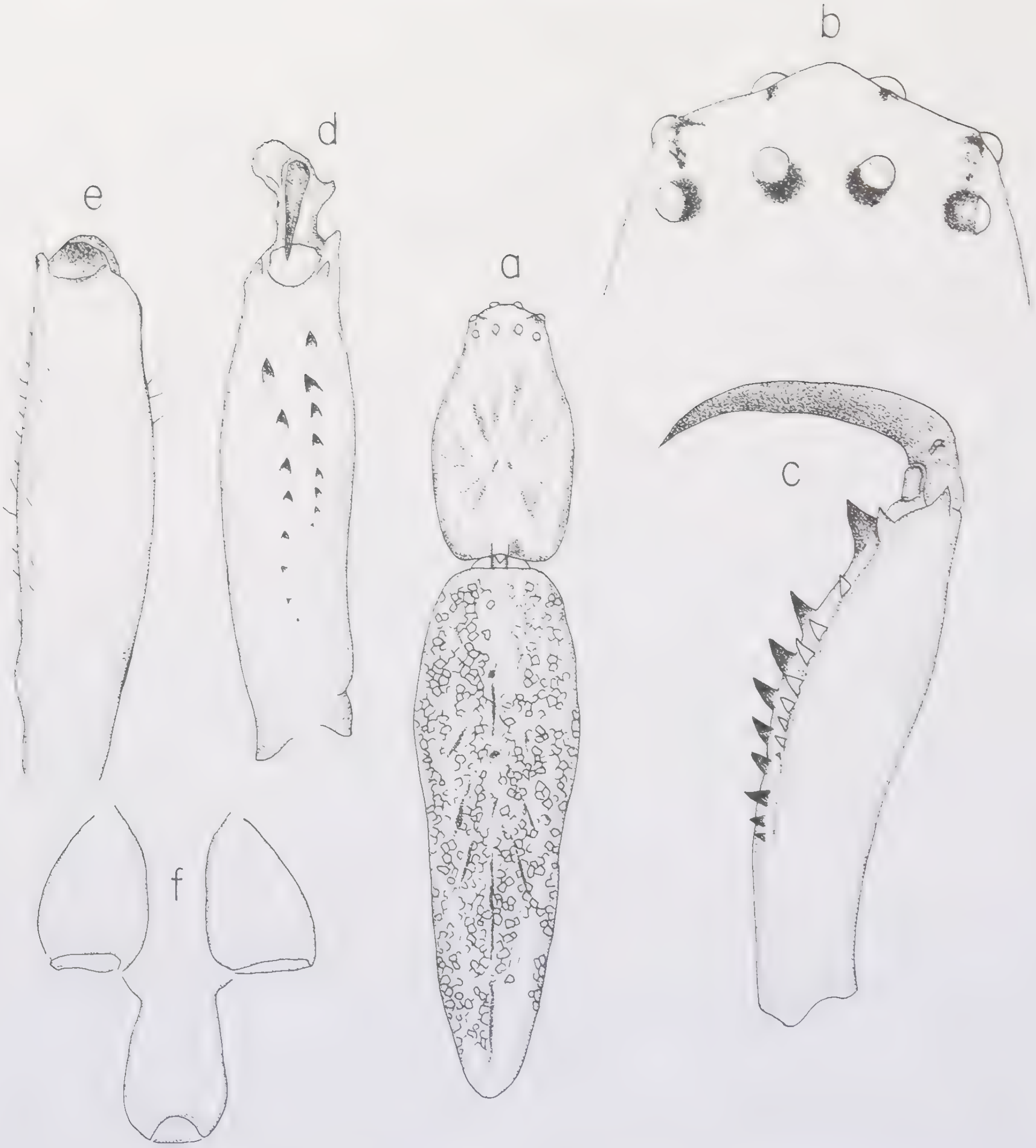


Fig. 319. Female *Tetragnatha nitens* (Audouin) (a); eye pattern (b); dorsal (c), ventral (d), and lateral (e) views of chelicera; and epigynal fold (f).

Cambodia, Laos, Philippines, Malaysia, Indonesia, Australia, Polynesia, Japan and West Africa.
Remarks: *T. mandibulata* Walckenaer was first reported to occur in Bangladesh in 1984 (Barrion 1984).

Tetragnatha nitens (Audouin)
(Figs 319a–f, 320a–i)

Eugnatha nitens (Audouin), 1827. Explic. Planch. Arachn. In: Savigny, Desc. de l'Egypt 22: 323.

Redescription:
Female (Fig. 319a–f): Total length 6.05 mm. Cephalothorax 2.15 mm long, 1.40 mm wide, 0.85 mm high. Abdomen 3.90 mm long, 1.50 mm wide, 1.40 mm high. Cephalothorax yellow-brown except black eye margins, narrow toward the cephalic and broad in the thoracic region. Fovea distinct, a recurved pit. Eight eyes in two rows, AE slightly shorter than PE row (0.70 : 0.75 mm), both rows slightly recurved. Eye diameter (mm): AME = 0.13, PME = 0.11, PLE = 0.10, ALE = 0.06. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.18, ALE–PLE = 0.06, PLE–PME = 0.15, PME–PME = 0.15. MOQ wider behind (0.38 mm) than in front (0.35 mm), anterior width subequal to length. Clypeus height 0.78 AME diameter. Sternum yellow, longer than wide, posterior end rounded between coxae IV and midanterior concave for reception of labium

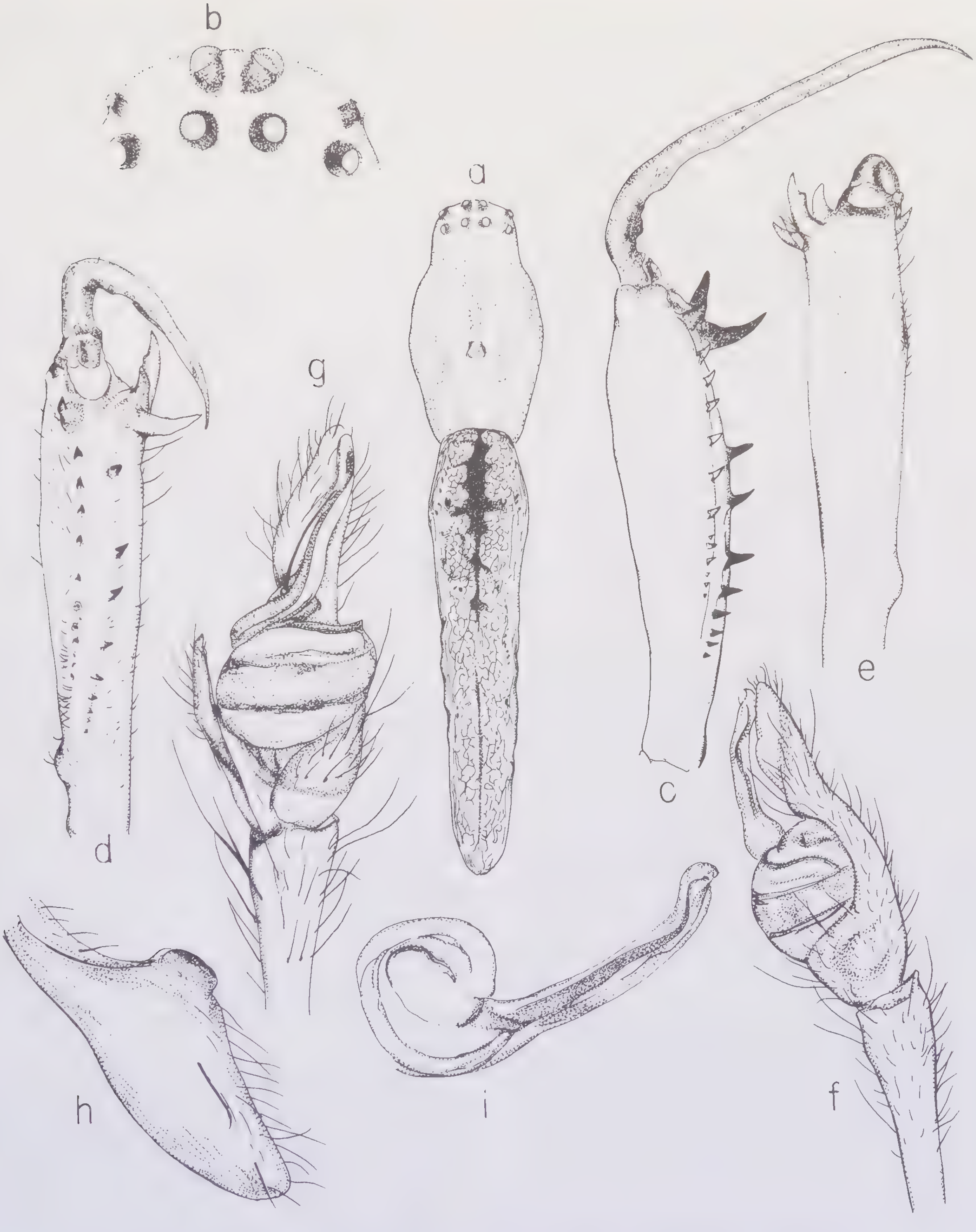


Fig. 320. Male *Tetragnatha nitens* (Audouin) (a); eye pattern (b); dorsal (c), ventral (d), and lateral (e) views of chelicera; retrolateral (f) and ventral (g) views of pedipalp; paracymbium (h); and tip of embolus and conductor (i).

base. Labium reddish brown in basal three fourths and yellow in apical one fourth, wider (0.40 mm) than long (0.28 mm). Maxillae longer than wide, inner one half yellow and unsclerotized, outer half hard and sclerotized, brown, apex moderately rounded. Chelicerae yellow-brown, about 0.76 length of cephalothorax. Promargin with six to eight teeth, auxiliary tooth of the guide indistinct, guide tooth (Gu) widely separated from first large tooth (T), enclosing one retromarginal tooth viewed dorsally. Retromargin with nine teeth. Fang with a strong ventral excrescence locking anterior to retromarginal guide tooth at rest. Legs yellow, long and slender. Spination in femur I =3-0-5-2, tibia I = 1-0-3-3, metatarsus I = 1-0-1-1; femur IV = 4-0-1-0, tibia IV = 2-0-2-2, metatarsus IV = 1-0-2-2. Femur I as long as metatarsus I. Metatarsi II and IV equally long. Metatarsus I/tarsus I = 3.04. Leg formula 1243. Pedipalp yellow, tarsus single-clawed, almost as long as combined length of patella IV and tibia IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.10	0.95	4.00	4.10	1.35	14.50
2	3.10	0.75	2.40	2.50	0.75	9.50
3	1.50	0.50	1.00	1.15	0.45	4.60
4	3.20	0.55	2.35	2.50	0.75	9.35
Pedipalp	1.00	0.35	0.60	–	0.85	2.80

Abdomen yellowish brown, longer than wide, anterior and posterior ends rounded. Abdominal tip not exserted beyond spinnerets. Epigynal fold relatively long, distal fold slightly wider than long, tip strongly cleft.

Male (Fig. 320a–i): Total length 11.00 mm. Cephalothorax 3.90 mm long, 2.20 mm wide, 1.80 mm high. Abdomen 7.10 mm long, 1.55 mm wide, 1.55 mm high. Cephalothorax brown except black eye margins, moderately high in the cephalic and low in thoracic area with a deep groove. Eight eyes in two rows, both rows slightly recurved, AE row slightly longer (1.25 mm) than PE row (1.23 mm). Eye diameter (mm): AME = 0.18, PME = PLE = 0.15, ALE = 0.10. Eye separation (mm): AME–AME = 0.10, AME–ALE = 0.18, ALE–PLE = 0.06, PME–PME = PME–PLE = 0.15. MOQ narrower anteriorly (0.35 mm) than behind (0.38 mm), anterior width equals length. Clypeus height 1.28 times AME diameter. Sternum yellow brown, twice longer than broad, laterals extended to carapace margins, posterior end tapered and extended beyond coxae IV. Labium pale reddish brown, as wide as long, anteriorly with a membranously tapered process. Maxillae yellow, three times longer than broad, apical end moderately rounded. Chelicerae longer than cephalothorax, apicodorsal with three strong teeth, locking apophysis (a) with a ventral spur. Promargin with nine teeth, excluding the three apicodorsal teeth. Retromargin bears 15 teeth. Legs brownish yellow, long, and slender. Spination in femur I = 3-0-7/8-4, tibia I = 2-0-4-3, metatarsus I = 1-0-1-1, femur IV = 4-0-2-1, tibia IV = 2-0-2-2, metatarsus IV = 1-0-2-2. Tibia II and metatarsus II subequal. Metatarsus I/tarsus I = 4.29. Leg formula 1243. Pedipalp 0.67 length of femur I, paracymbium broad at about midlength, distal end cleft. Tip of conductor and embolus shortly curved downwards.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	9.10	1.50	9.90	10.10	2.35	32.95
2	7.00	1.30	6.50	6.50	1.50	22.80
3	3.50	0.75	2.50	2.55	0.75	10.05
4	6.90	1.00	5.85	6.05	1.00	20.80
Pedipalp	2.50	0.95	1.30	–	1.25	6.00

Abdomen yellowish brown, at least 4.5 times longer than wide, anterior end rounded, and hardly exserted beyond spinnerets.

Natural history: Common in ricefields and sympatric with other *Tetragnatha* spp. in the vegetative stage of the rice plant.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Cale Vill., one male, 10 August 1977, R. Apostol; Lipa City, Marauoy Vill., one male and one female, 14 July 1981, A.T. Barrion and R.T. Barrion; Cagayan Prov., Solana, Iraga Vill., one male, 23 September 1981, R. Apostol and A.T. Barrion; *Panay Is.*, Iloilo Prov., Iloilo, Oton, Rizal Vill., two males and two females, 2 August 1977, A.T. Barrion; *Mindanao Is.*, Misamis Oriental Prov., Claveria, Kalingagan Vill., two males, 17 December 1989, E. Libetario; *Palawan Is.*, Brooke's Pt., two females and two males, 27 September 1984, A.T. Barrion. **BANGLADESH:** Mymensingh, one female, 29 October 1984, A.T. Barrion. **THAILAND:** Chanchaensao, one female and one male, 7 August 1989, A.T. Barrion. **VIETNAM:** Hanoi, PRRI, one males, 6 August 1990, A.T. Barrion; Tien Giang, Cay Lay, two females and one male, 15 August 1990. **INDONESIA:** Yogyakarta, Klaten, Kerang Anon, four females and three males, 22 August 1989, A.T. Barrion.

FAMILY METIDAE C.L. KOCH

(Metid Spiders)

The metids closely resemble the long-jawed tetragnathid spiders in the presence of long legs, elongate to slender abdomen, and indistinct epigynum. Metids, however, have nearly straight epigastric furrow and not strongly procurved, as shown in family Tetragnathidae. The chelicerae of most metids possess a rudimentary external condyle.

Members of the family are often beautifully colored. They build horizontal webs on top of grasses, small shrubs, or trees, with an open hub in early morning.

Five genera – *Phonognatha*, *Meta*, *Leucauge*, *Tylorida*, and *Mesida* – are reported here. All but *Leucauge* are new generic records for the Philippines.

The family Metidae needs a modern definition at present. The generic composition within the family is still unclear. Brignoli (1983) considers the family distinct from Araneidae and Tetragnathidae and accommodated 37 genera therein, including the above. However, Platnick (1989) treated the above five genera under the family Tetragnathidae. We followed the Brignoli system in this book.

KEY TO THE GENERA AND SPECIES OF METID SPIDERS

1 Femur IV without trichobothria; cymbium developed; paracymbium in males with several branches and embolus free on the conductor. 2

– Femur IV with trichobothria. 4

2 Abdominal dorsum grayish black with yellow to white markings, median with one or two pairs of elongate to subglobular spots (Fig. 321a); posterior tip of abdomen truncate or slightly cleft with a deep cavity running down to spinnerets seen laterally; spermathecal sac on top of the double-coiled transverse duct, slender and elongate, converging apically (Fig. 321g). .... *Phonognatha guanga* n. sp. (Figs 321a–g, 322a–e)

– Not as above. 3

3 Cephalothorax blackish brown, 2.20 mm long; eye diameter PME > AME = ALE > PLE; anterior margin of abdomen truncate (Fig. 323a), anterolaterals and posterior end black; spination in tibia I = 2-4-2-2 and metatarsus I = 2-2-1-1. .... *Meta baywanga* n. sp. (Fig. 323a–g)

– Cephalothorax reddish brown, 1.60–1.90 mm long; eye diameter PME > PLE > ALE > AME or PME > AME = ALE = PLE; anterior margin of abdomen rounded, posterior margins subtruncate in female (Fig. 324a) or with transverse bands in male (Fig. 325a); spination in tibia I = 2-5-2-2 in female and 2-3-1-1 in male, and metatarsus I = 1-0-1-1 in both; epigynum simple plate with a minute bulge (Fig. 324d). .... *Meta tiniktirika* n. sp. (Figs 324a–d, 325a–f, 326a–d)

4 Femora I–IV each with a single row of trichobothria; abdomen with oblique rectangular marks (Fig. 327a); abdomen high along anterior one third seen laterally in female (Fig. 328a); tegulum large and lined with many looped ejaculatory duct; embolus and conductor tapers apically (Fig. 327efg); epigynum with a transverse sclerotized process medially (Fig. 328f). .... *Tylorida striata* Thorell (Figs 327a–j, 328a–f)

– Femur IV with two rows of long trichbothria. ... 5

5 Trichobothria branched; male chelicerae with a clasping spur. 6

– Trichobothria simple; male chelicerae without clasping spur. 7

6 Abdomen with only one black spot or band posteriorly (Fig. 329a); AME > PME = PLE > ALE; clypeus height as long as one AME diameter; spination in tibia I = 1-0-3-3; femur IV = 4-0-1-2; metatarsus I/tarsus I = 3.82; embolus half-coiled at top of a membranous apical membrane, apex sharply pointed (Fig. 329ef). .... *Mesida realensis* n. sp. (Fig. 329a–g)

– Abdomen with four black spots, two in the middorsolaterals and one each at the anterior and posterior ends (Fig. 330a); AME = PME >ALE = PLE; clypeus height ca. 0.64 AME diameter; spination in tibia I = 2-0-3-2; femur IV = 4-0-2-3; metatarsus I/tarsus I = 4.73; embolus and conductor process bifid apically (Fig. 330fg). .... *Mesida matinika* n. sp. (Fig. 330a–h)

7 Male *Leucauge*. 8

– Female *Leucauge*. 9

8 Assassin bug-like with subglobose abdomen (Fig. 331ab); chelicerae each with 43 spines dorsally, with the longest spine on a hump close to AME, and ten shorter spines midventrally (Fig. 331cd); pedipalp 1.6 times longer than femur I. .... *Leucauge parangscipinia* n. sp. (Fig. 331a–g)

– Not assassin bug-like; abdomen distinctly elongate with a pair of black spotted shoulder humps and four black spots posteriorly, with posteriormost pair sometimes contiguous as a transverse band (Fig. 332ab); chelicerae normal, retromargin with four teeth and promargin with three teeth (Fig. 332c); pedipalp hardly one half of femur I. .... *Leucauge decorata* (Blackwall) (Fig. 332a–g)

9 Epigynum with two large openings toward the anterior, separated by a long, thin median scape (Fig. 334e). .... *Leucauge mahabascapea* n. sp. (Fig. 334a–e)

– Epigynum not as above. 10

10 Abdomen with distinct humps. 11

– Abdomen without humps, anterior and posterior ends strongly rounded. 14

11 Abdomen silvery green with a black spot on the shoulder humps, two small black spots subposteriorly (Fig. 333a); laterals with alternating longitudinal silvery green and black bands, and posterodorsal tip rounded, diverging from spinnerets (Fig. 333b); epigynum with a hat-like band anterior to the recurved AEM, scape broadly truncate towards PEM, with constrictions at midlength (Fig. 333cd). .... *Leucauge decorata* (Blackwall) (Fig. 333a–f)

– Abdomen and epigynum not as above. 12

12 Abdominal dorsum orange with black and silvery markings, narrowed anterior part strongly overhangs

carapace (Fig. 335ab); epigynum with an arrow or rocket-like scape (Fig. 335ef). .... *Leucauge fastigata* (Simon) (Fig. 335a–f)

– Abdomen without orange markings and epigynum never arrow-like. 13

13 Foveal area and margins of cephalothorax at thoracic area pale gray-brown to black; abdomen with four distinct anterodorsal and four small posterodorsal humps (Fig. 336ab); epigynum with a broad, apically truncate scape (Fig. 336e). .... *Leucauge argentina* (Van Hasselt) (Fig. 336a–e)

– Cephalothorax yellow-brown; abdomen silvery with three longitudinal median black stripes, a black spot on moderately swollen shoulder humps, and a transverse black band posteriorly, posterodorsal one third with yellowish brown corrugations (Fig. 337a); epigynum with a longer than wide scape, basolateral one half concave, and apex moderately procurved (Fig. 337de). .... *Leucauge bontoc* n. sp. (Fig. 337a–e)

14 Abdomen ovoid, twice longer than carapace, broadest and more globose anteriorly (Fig. 338ab); subtruncate scape as long as wide, with a pair of pit-like scars in apical one fifth, AEM transversely recurved and close to the laterobasal orifice, ovoid spermathecae borne on a short duct (Fig. 338ef). .. *Leucauge celebesiana* (Walckenaer) (Fig. 338a–g)

– Abdomen oblong, 1.8 times longer than carapace, uniformly rounded anteriorly and posteriorly viewed dorsally (Fig. 339a); apically truncate scape 1.7 times longer than wide, its base widely separated from AEM, spherical spermathecae borne on a stalk-like duct (Fig. 339fg). .... *Leucauge iraray* n. sp. (Fig. 339a–g)

Genus *Phonognatha* Simon

Phonognatha Simon, 1894. Hist. Nat. Araign. 1(3): 748.

A very small genus of metid spiders, comprising only four species, endemic in the Australian and Oriental regions. *Phonognatha* Simon belongs to the subfamily Phonognathinae – the leaf-curling spiders. Members of the genus have longer than wide carapace, ovoid to elongate abdomen with distinct pattern or spots, AE row recurved, MOQ either wider behind than in front or vice versa; male pedipalp with a smooth-edged paracymbium located on the proximal one half of the moderately elongate cymbium, conductor often coiled, embolus emanates from base of tegulum, tibia simple; female epigynum simple, spermathecal sacs slender and elongate, borne on the backside of spermathecae, anterior epigynal margin distinctly sclerotized.

Phonognatha – a new genus record for the Philippines – is a metine (Davies 1988) and provisionally treated here under the family Metidae. Brignoli (1983) placed *Phonognatha* under the subfamily Nephilinae of the family Araneidae. Davies (1988) and Platnick (1989) considered it a member of the family Tetragnathidae.

Phonognatha guanga new species
(Figs 321a–g, 322a–e)

Description:
Female (Fig. 321a–g): Total length 4.10 mm. Cephalothorax 1.40 mm long, 0.90 mm wide, 0.75 mm high. Abdomen 2.70 mm long, 1.70 mm wide, 1.80 mm high. Cephalothorax yellowish brown with pale black eye margins, lateral and posterior margins of thorax. Cephalic area moderately rounded anteriorly and higher than the thorax. Eight eyes in two rows, AE strongly recurved and PE procurved to straight. Eye diameter (mm): PME = 0.12, AME = 0.09, ALE = PLE = 0.08. Eye separation (mm): AME–AME = 0.05, ALE–AME = 0.10, LE contiguous, PME–PME = 0.13, PME–PLE = 0.07. MOQ-AW shorter than MOQ-PW, MOQ-L ca. 0.85 of MOQ-PW (0.33 mm). Clypeus height 2.8 times AME diameter. Sternum brown, slightly hairy, distinctly longer than wide, posterior end tapering and extended beyond coxae IV. Basal one half of labium brown, entire to the sternum, apical one half yellow with rounded apex. Maxillae yellow to yellowish brown basally, apices with scopulae converging. Chelicerae brown, small, and vertical, each row with four teeth. Promarginal teeth more robust than the retromarginals. Legs yellowish brown with few spines, femora I–IV each with a pair of long ventral bristles subbasally. Femoral order of length (mm): I (2.35) > IV (2.10) >II (1.90) > I (1.45). Pedipalp yellow with brownish tarsus, ca. 0.53 length of femur I.

Abdomen subovate with a truncate posterior end, yellow except gray to black laterals and posterior end, anterior of posterior black band with a pair of brownish spots. Gray laterals with a longitudinal yellow band medially. Venter uniformly grayish black, similar to colulus and diverging spinnerets, except brownish epigynum. Posterior end of abdomen with a cavity between spinnerets and truncate tip seen laterally. Epigynum with a broad inverted V-shaped anterior epigynal margin (AEM) and a slightly sclerotized to membranous clitoris-like plate posterior of AEM. Ducts each with two transverse coils. Spermathecal sac elongate and slender, apices converging.
Young female (Fig. 322a–e): Total length 3.24 mm. Cephalothorax 1.54 mm long, 0.98 mm wide, 0.96 mm high. Abdomen 1.70 mm long, 2.08 mm wide, 2.08 mm high. Cephalothorax yellow with grayish thorax and lower cephalic margins, eye surrounds black, generally elongate with rounded clypeal area and recurved posterior end. Fovea deep, transverse, and three-pronged posteriorly. Eight eyes in two rows, recurved AE shorter than slightly procurved PE (0.56 : 0.60 mm);

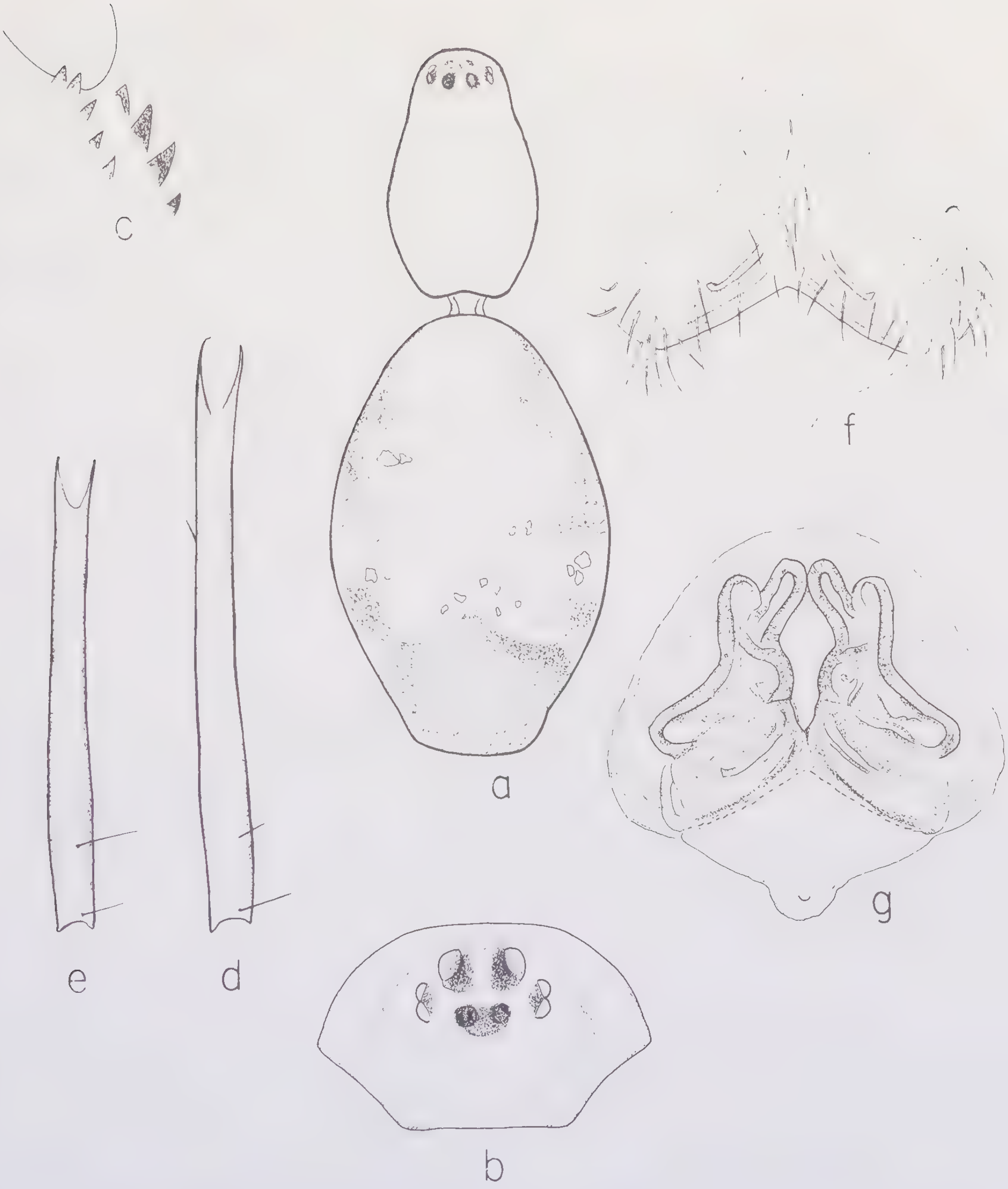


Fig. 321. Female *Phonognatha guanga* n. sp. (a); eye pattern in dorsal view (b); cheliceral teeth (c); venter of femora I (d) and II (e); and dorsal (f) and ventral (g) views of epigynum.

eye diameter (mm): PME = 0.11, AME = ALE = PLE = 0.08. AME separation one eye diameter, AME–ALE separation 1.5 eye diameter, ALE–PLE contiguous, PME separation two AME diameters, and PME–PLE separation one ALE diameter. Clypeus height three times AME diameter, margins straight. Sternum brown, cup-shaped, longer than wide, with extensions between coxae, broadest basally, forming an inverted Y between coxae IV, and apically connected to the brown parallel-sided base of labium. Labium with a yellow distal border and a proximal light brown cavity. Chelicerae with a vestigial condyle, five promarginal and five retromarginal teeth. Maxilla longer than wide, almost parallel-sided and with a deep brown serrula. Legs yellow with grayish tinge to bands in tibia, patella, distal end of femur, and basal end of metatarsus in leg IV, slender with relatively few spines in tibiae and metatarsi, femora II and III with two long erect subbasoventral

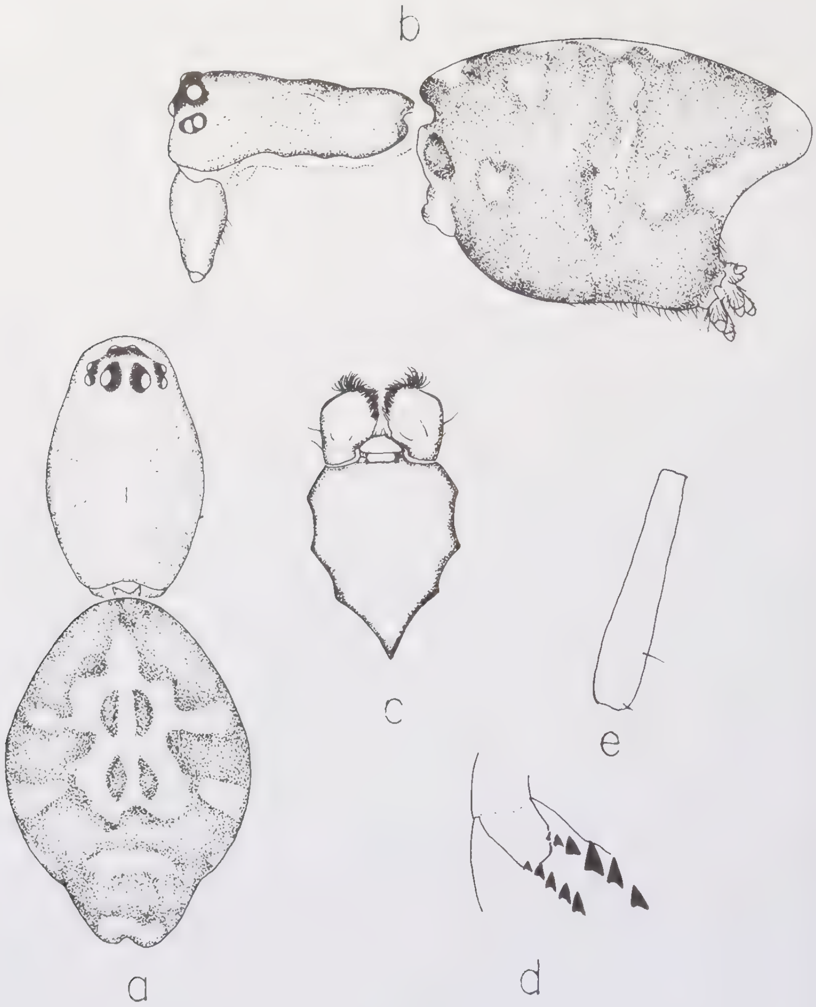


Fig. 322. Young female *Phonognatha guanga* n. sp., dorsal (a) and lateral (b) views; sternum, labium, and maxillae (c); cheliceral teeth (d); and femur I (e).

hairs, femur IV with only one, none in femur I. Spination in tibia III = 2-3-0-1. Leg formula 1243. Pedipalp nearly as long as tarsus IV, with yellowish gray femur, patella, and tibia and brown tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.33	0.44	2.33	2.50	1.50	9.10
2	2.00	0.44	1.77	1.94	1.11	7.26
3	1.50	0.38	1.16	1.38	0.72	5.14
4	2.16	0.38	1.77	2.05	0.94	7.30
Pedipalp	0.52	0.16	0.36	–	0.60	1.64

Abdomen grayish black, a broad median white cross-shaped band with two pairs of ovoid spots at center prominent dorsally, posterior end a tubercle, and recurved between spinnerets and the proxinal portion (as seen laterally). Lateral margins with three longitudinal white elongated spots. Spinnerets gray with yellow-brown terminal segment, small posterior pair separated from anterior by one diameter of the basal anterior segment.

Young male: Very similar to the female except for smaller body size (2.80 mm long), shorter legs, and enlarged palp.

Etymology: Named after the cavity, 'guang' in Tagalog, in the posterior end of abdomen viewed laterally.

Natural history: Collected underneath leaves of mungbean planted after rice, feeding on tetranychid mites with broken legs on the mite webs near a penultimate male. The subadult female was collected from irrigated rice in March.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, holotype female, 4 April 1984, A.T. Barrion; penultimate male paratype, same data as holotype; Liliw, Tuybaana Vill., one subadult female paratype, 14 March 1979, T.J. Perfect.

Distribution: Philippines.

Remarks: A subadult female (Fig. 322a–e) taken from rice has five teeth each in the promargin and retromargin, gray abdomen broadest at midlength with a cross-like white band containing two pairs of gray elongate spots in the middorsum. Leg formula 1243.

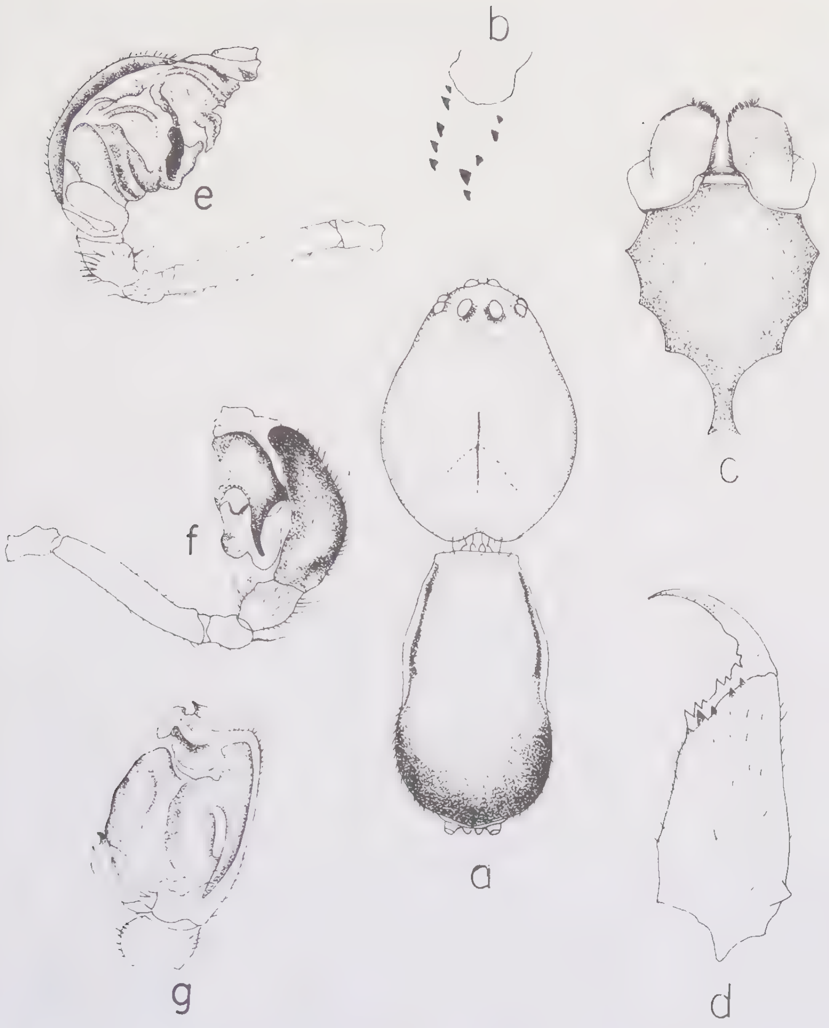


Fig. 323. Male *Meta baywanga* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); right chelicera (d); and lateral (ef) and ventrolateral (g) views of palpal organ.

Genus *Meta* C.L. Koch

Meta C.L. Koch, 1836. In Panzer, Arachniden Heft 134: 6.
Epeira Walckenaer, 1841. Hist. Nat. Ins. Apt. 2: 82.
Metabus O.P. Cambridge, 1899. Biologia Cent. Amer. (Zool.) 1: 298.
Auchicybaeus Gertsch, 1933. Amer. Mus. Novit. 637: 11.
Meta Locket and Millidge, 1953. Brit. Spiders II – Roy. Soc. London: 113.

Meta C.L. Koch is a moderately large genus, comprising 23 species, mostly occurring in the Palaearctic, Nearctic, and Neotropical regions of the world, except *M. simlaensis* Tikader, 1982 from the Oriental region. Members of the genus show the following diagnostic characters: carapace with a long and deep fovea, usually trifid posteriorly; median ocular quadrangle rarely longer than wide and moderately wider behind, ME subequal; LE close to each other; PME (posterior medians) slightly closer to each other than to the adjacent PLE; maxillae narrow proximally and longer than broad; abdomen ovoid; epigastric plate without furrow; and male pedipalp with a short tibia and prominently developed paracymbium.

Meta baywanga new species
(Fig. 323a–g)

Description:
Male: Total length 4.48 mm. Carapace 2.20 mm long, 1.52 mm wide, 1.36 mm high. Abdomen 2.28 mm long, 1.20 mm wide, 1.36 mm high. Cephalothorax blackish brown, narrow at both ends and widest above coxa II, cephalic higher than thorax, ocular area with one long brown hair behind PLE and three or four between the median and lateral eyes. Eight eyes in two rows, AE strongly recurved and shorter than the straight PE (0.74 : 0.78 mm); diameter (mm) in decreasing order:

PME = 0.14, AME = ALE = 0.10, PLE = 0.09. AME separation 1.7 times eye diameter. AME–ALE separation twice AME diameter. PME separation twice eye diameter. PME–PLE separation one PME diameter. Median ocular quadrangle 1.9 times wider behind than in front (0.26 : 0.48 mm). Clypeus height five times AME diameter. Sternum reddish brown, similar to maxilla, labium, and chelicera, longer than wide, margins concave opposite coxae, posterior end narrowed and extended between coxae IV. Labium with a transverse ridge-like apical one third. Maxilla longer than wide, partially rounded distal margins with scopulae and serrula, slightly converging apically. Chelicera vertical with five teeth each in the promargin and retromargin, second promarginal tooth the largest, basal one fifth of chelicera with a dorsolateral tooth, fang with an internal cleft above base. Legs brown, long, and slender with thin spines, bases of femora I–IV with a long and erect ventral hair, spination in tibiae I = 2-4 (1-1-1-1)-2-2, II = 2-5(1-1-1-2), III = 2-4(0-2-2)-1-1, and IV = 2-2(0-0-2)-1-1, spination in metatarsi I = 2-2(0-1-1)-1-1, II = 2-3(0-2-1)-1-1, III = 2-3(0-1-2)-1-1, and IV = 2-4(0-1-1-2)-1-1. Tarsi three-clawed with seven or eight teeth in the superior claw and one or two teeth in the inferior claw, two auxiliary foot claws present. Leg formula 1243. Palp dark brown, trochanter elevated at midlength, producing cavities/grooves at both ends, patella with a curved hair near apex, tibia hirsute behind paracymbium, paracymbium two-branched, the first or outer branch hairless, bolo-like with a broad-bladed middle part and narrowed before apex to a pointed end, second branch rectangular and highly sclerotized. Cymbium hirsute and dark brown, except reddish brown lateral margin, with an elevated median opposite tip of paracymbium and elbow-like basoventral apophysis directed upwards. Median apophysis reduced above median, with a partially enlarged tip. Radix with a long and sharply pointed arm extended downward towards the tegulum, inner portion with a tooth, and apical margin finely serrated.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.80	0.52	2.76	3.20	1.70	10.98
2	2.32	0.52	2.20	2.64	1.20	8.88
3	1.60	0.44	1.28	1.80	0.72	5.84
4	2.40	0.48	2.08	2.76	1.08	8.80

Abdomen elongate, basal two thirds white, with a black longitudinal band dorsolaterally, rounded towards the black posterior end, constricted a little below midhalf, and slightly straight apically. Abdominal venter uniformly black. Spinnerets projected diagonally, posterior pair small, ca. one half the diameter of the anterior pair, which is 1.4 times longer than posterior.

Etymology: Named after the abdominal constriction similar to a waist ('baywang' in Tagalog).

Natural history: Handpicked in October from a soil crevice at the base of a stand of creeping rattan with moss adjacent to a slash-and-burn upland rice.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, A.T. Barrion.

Distribution: Philippines.

Meta tiniktirika new species

(Figs 324a–d, 325a–f, 326a–d)

Description:

Female (Fig. 324a–d): Total length 4.10 mm. Cephalothorax 1.60 mm long, 1.13 mm wide, 1.06 mm high. Abdomen 2.50 mm long, 1.73 mm wide, 1.70 mm high. Cephalothorax brownish red, with dark to grayish brown cephalic area, dark red to black longitudinal fovea, and thin black eye margins. Fovea brown, yellow bands radiate from fovea to each lateral side of carapace. Fovea forked at both ends. Cephalic area moderately attenuated and rounded in the clypeal margin and higher than the thoracic area. Eight eyes in two rows, all clear, strongly recurved AE as long as straight to slightly procurved PE. Eye diameter (mm): PME = 0.15, PLE = 0.11, ALE = 0.10, AME = 0.08. Eye separation: AME–AME three fourths eye diameter, AME–ALE 1.75 times AME diameter, PME–PME 2.4 times AME diameter, PME–PLE 1.25 times AME diameter. LE subcontiguous. Median ocular quadrangle narrow in front, ca. 0.60 of posterior width, and anterior width shorter than length. Clypeus height very large, 3.25 times AME diameter. Sternum black, with about ten erect long hairs in three or four transverse rows, anteror midborder not well separated from labium, posterior end broadly extended beyond coxae IV. Labium swollen in the yellow-gray apical end. Maxillae reddish brown, with yellow retromargin and pale brown scopulae in the apical margin anterior to the serrula. Chelicerae brown-yellow with gray flecks, moderately small, promargin with six teeth, and retromargin with five teeth. Third promarginal teeth from the base the largest. Legs yellow to yellow-brown, slender, and with moderate number of strong spines. Venter of femur I with two erect setae towards base, II with one or two, III with three, and IV with one. Spination in tibiae I = 2-5-2-2, II = 2-3-2-2, III = 2-3-2-1, IV = 2-3-2-2, and metatarsi I = 1-0-1-1, II = 2-1-1-1, III = 1-3-1-1, IV = 2-1-1-1. Metatarsus I/tarsus I = 1.69. Tarsi three-clawed, each superior claw with 13–15 teeth. Leg formula 1243. Pedipalp as long as combined length of metatarsus III and tarsus III.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.30	0.46	2.30	2.38	1.41	8.85
2	1.93	0.48	1.73	1.90	1.05	7.09
3	1.38	0.35	1.10	1.20	0.65	4.68
4	2.05	0.38	1.65	2.05	0.94	7.07
Pedipalp	0.56	0.23	0.38	–	0.68	1.85

Abdomen oblongate, dorsally bears a mushroom-like yellow band, with a broad transverse base subposteriorly and brown margin laterally and posteriorly.

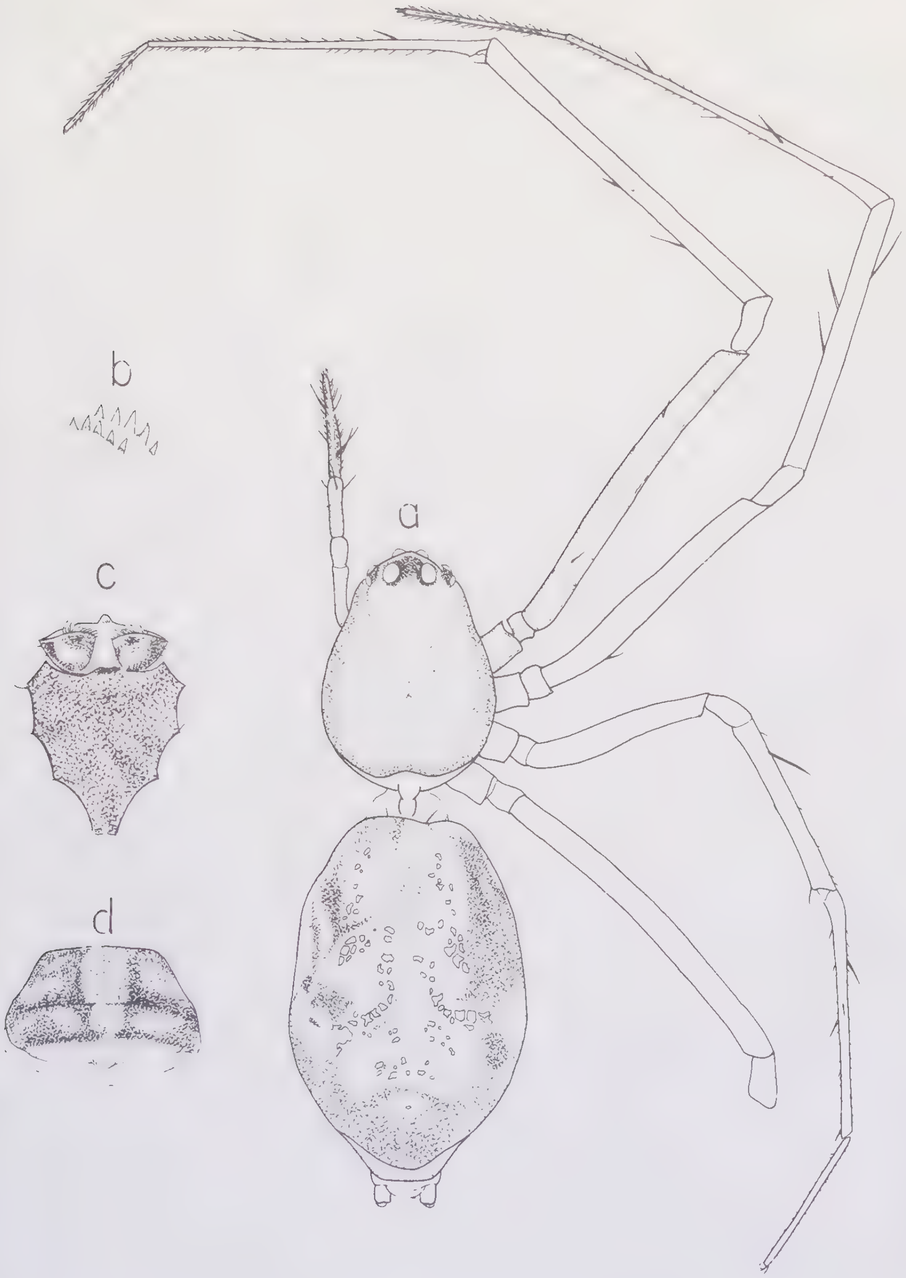


Fig. 324. Female *Meta tiniktirika* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and epigynum (d).

Venter dark gray to black, except reddish brown bulbous epigynum. Epigynum with a strongly transverse, elliptically broad orifice in line with the epigastric groove, median one half bisected by a longitudinal yellow groove and each half further divided into two by a transverse median groove.

Male (Fig. 325a–f): Total length 3.95 mm. Cephalothorax 1.90 mm long, 1.35 mm wide, 1.10 mm high. Abdomen 2.05 mm long, 1.00 mm wide, 1.10 mm high. Cephalothorax dark red to red-brown, with broad black eye margins, AME separation, and fovea. Cephalic area much higher than the thoracic area and moderately attenuated. Fovea longitudinal and forked anteriorly, forming an inverted triangle. Eight eyes in two rows, all clear except AME. AE strongly recurved and PE strongly procurved. Eye diameter (mm): PME = 0.13, AME = ALE = PLE = 0.08. Eye separation: AME–AME 0.60 AME diameter, AME–ALE = PME–PLE as long as one PME or 1.6 times AME diameter, PME–PME 2.5 times AME diameter. LE subcontiguous. Median ocular quadrangle distinctly narrower in front (0.23 mm) than behind (0.43 mm), longer than broad compared to the anterior width, and vice versa taking the posterior width. Clypeus height remakably

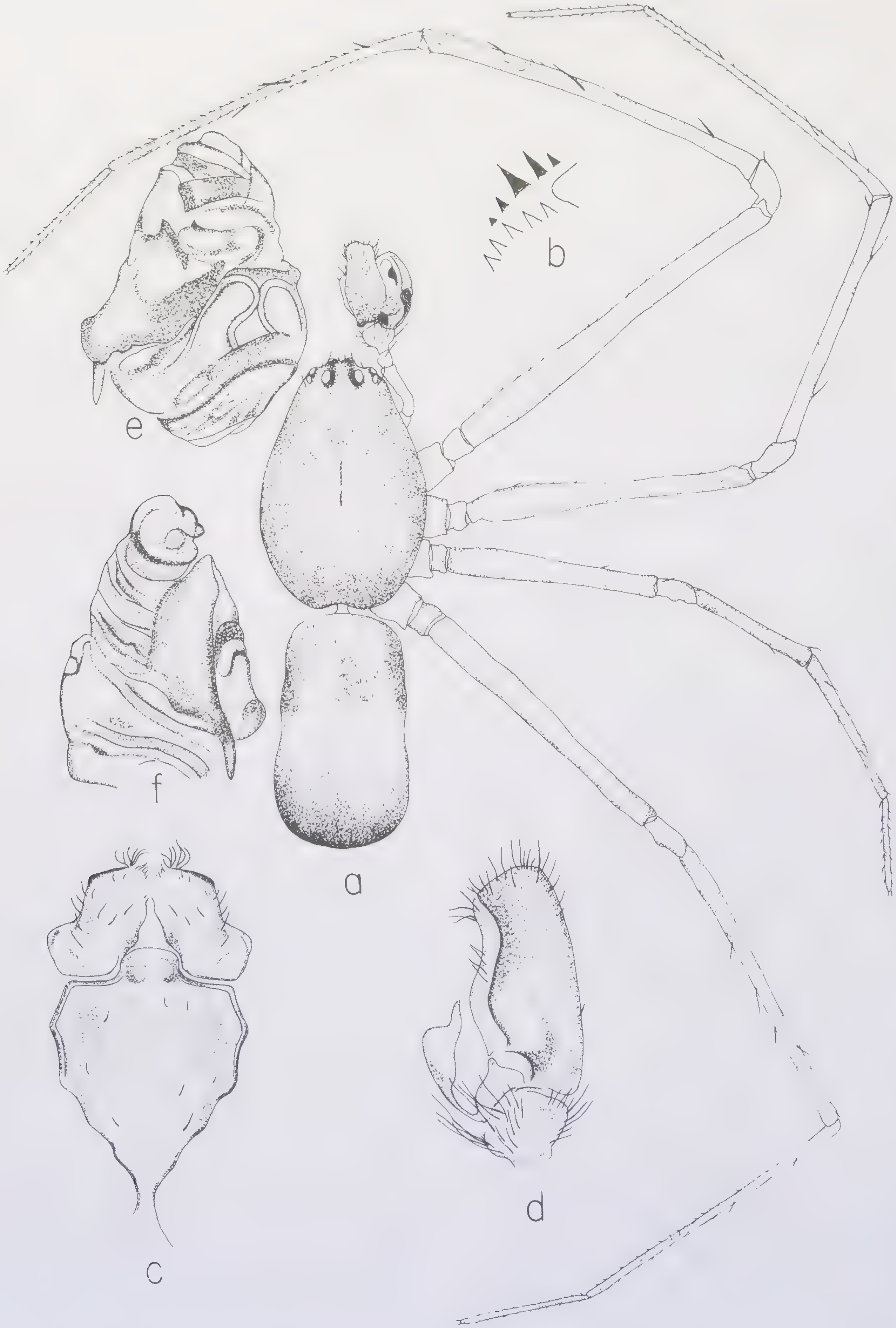


Fig. 325. Male *Meta tiniktirika* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); tibia and cymbium of pedipalp (d); and ventral (e) and lateral (f) views of palpal organ.

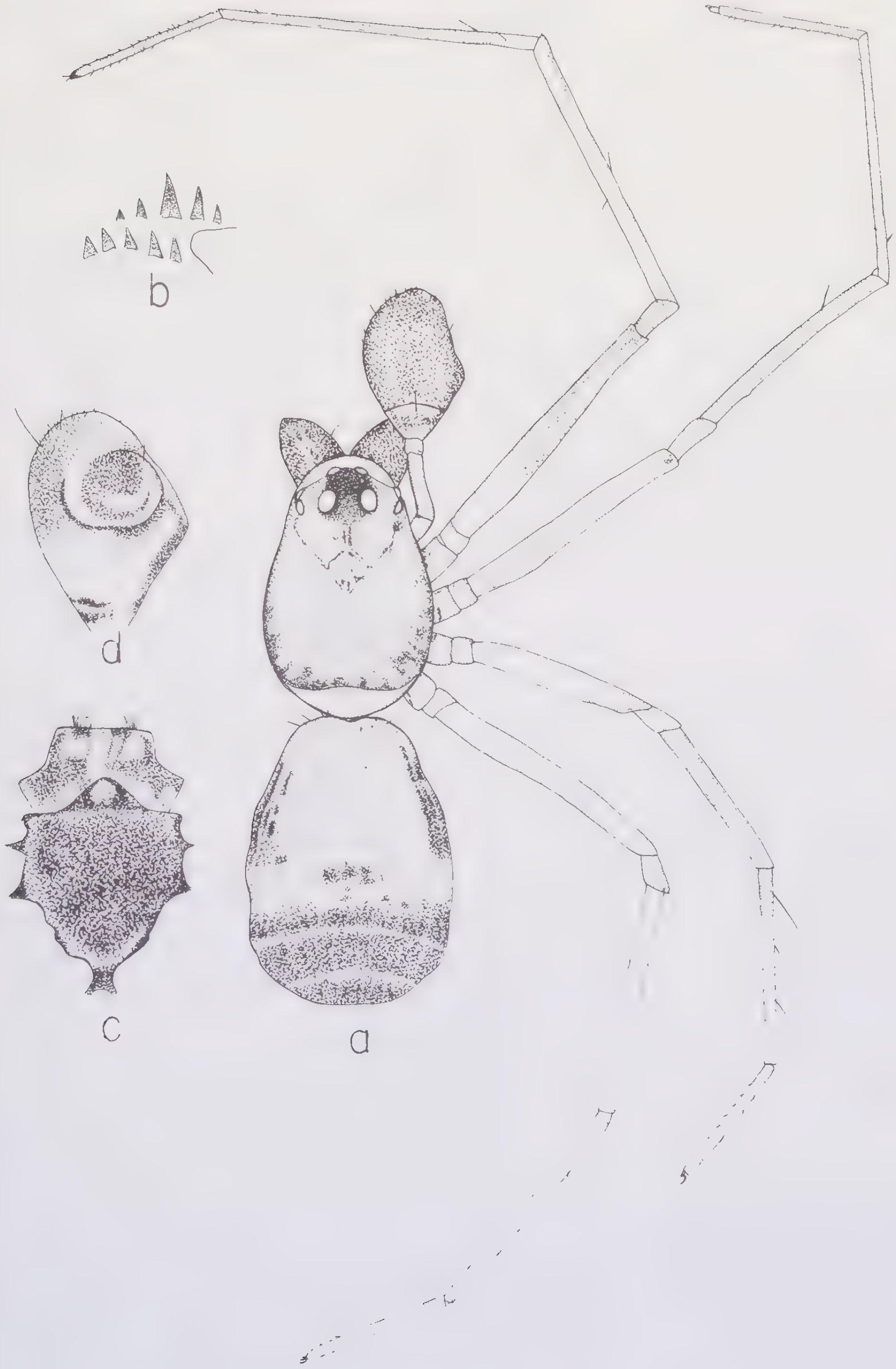


Fig. 326. Subadult male *Meta tiniktirika* n.sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and underdeveloped palpal organ (d).

large, almost five times AME diameter. Sternum as in the female except for lighter coloration, narrow posterior end, becoming inverted Y towards pedicel. Labium swollen and pale yellow distally. Maxillae similar to the female, yellowish with gray flecks in the apical one half and two brown subglobular spots in the basal one half. Chelicerae moderately small and robust, attenuate apically, promargin and retromargin each with five teeth. Legs yellow-brown, except brown femora and light yellow base of femora IV, long and slender with few spines. Spination in tibiae I = 2-3-1-1, II = 2-2/3-0-1, III = 2-3-1-1, IV = 2-4/5-2-2; metatarsi I = 1-0-1-1, II–IV = 2-3-1-1. Metatarsus I/tarsus I = 1.93. Leg formula 1423. Pedipalp as long as femora I; patella with a dorsal long thin seta subapically; tibia hirsute dorsally; paracymbium scraper-like, prominently large with a pointed outwardly curved tip, wide medially, and constricted basally; median apophysis with a long tooth-like spur directed posteriorly; stripes transparent and slightly coarse.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.38	0.45	2.40	2.80	1.45	9.48
2	2.00	0.43	1.90	2.25	1.03	7.61
3	1.45	0.35	1.23	1.55	0.65	5.23
4	2.05	0.40	1.95	2.90	1.50	8.80
Pedipalp	0.85	0.23	0.30	–	1.00	2.38

Abdomen grayish brown with a broad transverse median yellow band, oblongate, becoming globular posteriorly, venter black except the whitish epigastric furrow and pale reddish brown book lungs. Spinnerets visible dorsally, anterior pair much larger than the posterior and distinctly diverging apically. Colulus prominently large, with a long hair on its basolateral side.

Etymology: Derived from erect nature of ventral spines in the femora (in Tagalog 'tinik' = spine and 'tirik' = erect).

Natural history: All specimens were collected from pitfall trap in slash-and-burn upland rice in May and November.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 2 May 1984, R. Apostol and A.T. Barrion; Laguna Prov., Siniloan, Magsaysay Vill., paratypes two females (without abdomen), three males (two with incomplete legs), and two immature males (one without abdomen), 21 November 1985, A.T. Barrion.

Remarks: Two subadult males shown in Fig. 326a–d have darker body coloration.

Genus *Tylorida* Simon

Tylorida Simon, 1894. Hist. Nat. Araign. 1(3): 737.

Tylorida Simon is a very small genus of metid spiders, represented by only four species scattered in the Palaearctic, Oriental, and Ethiopian regions. The genus is easily separated from the rest of the metids by the very long leg I, single row of straight trichobothria on each of legs I–IV, very long trochanter on the pedipalp, multicoiled duct in the tegulum, large subtegulum, and diverging spermathecal sacs.

Tylorida is a new genus record for the Philippines.

Tylorida striata Thorell
(Figs 327a–j, 328a–f)

Tylorida striata Thorell, 1989. Bih. Vensk. Vet. Ak. Handl. 25 (4): 34.

Redescription:

Male (Fig. 327a–j): Total length 4.05 mm long. Cephalothorax 1.72 mm long, 1.44 mm wide, 1.11 mm high. Abdomen 2.33 mm long, 1.38 mm wide, 1.66 mm high. Cephalothorax yellow, except black eye rims, parallel longitudinal gray bands running from PME to fovea, carapacial margins gray. Fovea gray and produced arrow-like by the diverging arms of the parallel band. Cephalic region elevated. Eight eyes in two rows. AE strongly recurved. PE straight to slightly recurved. AE shorter than PE (0.64 : 0.68 mm Eye diameter (mm): AME = 0.14, PLE = PME = 0.10, ALE = 0.08. AME and AME–ALE separation one PME diameter. PME separation one ALE diameter. PME–PLE separation one eye diameter. Median ocular quadrangle wider in front than behind. LE close to one another. Clypeus height twice PME diameter. Sternum gray, longer than broad (0.95 : 0.77 mm), broad apically, tapers to an inverted Y-shape beyond coxa IV posteriorly, distal portion indented medially for base of labium. Labium wider than long (0.17 : 0.33 mm), flat apically, with a pair of long and parallel hairs on apicolateral margins. Maxillae yellow, longer than wide, broadens to the apical one half with maximum width distally, broad portion with five to seven long hairs. Chelicerae vertical, with three promarginal and five retromarginal teeth. Apical teeth of both margins and basal tooth of promargin the largest. Promarginal tooth on distal end well separated from the basal pair. Legs yellow, slender, with prominently dark brown spine. Spination in tibiae I = 2-0-3-3, II = 2-0-2-1, IV = 2-0-2-1; metatarsi I = II = 2-0-0-0, IV = 1-0-2-0; tarsus three-clawed, each superior claw with eight teeth. Leg formula 1243. Pedipalp yellow, with brown cymbium, transparent basal apophysis of cymbium, dirty white tegulum, coiled brown ejaculatory duct, and white fan-like conductor; tibia cup-like with one dark brown horizontal long hair, two cavities apically, and pointed basally.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.66	0.88	4.88	4.38	1.16	15.96
2	2.72	0.62	2.40	3.00	0.80	9.54
3	1.37	0.37	0.95	1.15	0.50	4.34
4	2.47	0.50	2.00	2.25	0.62	7.84

Abdomen yellow, decorated with silvery square to rectangular bands dorsally and laterally, hump-like laterally, venter yellow, with parallel black bands above epigastric furrow and anterior spinnerets. Spinnerets yellow-brown and subequal in size and length.

Female (Fig. 328a–f): Total length 3.17 mm long. Cephalothorax 1.17 mm long, 0.95 mm wide, 0.80 mm high. Abdomen 2 mm long, 1 mm wide, 1.4 mm high. Cephalothorax with two long gray parallel bands behind PME, converging along fovea and extending to posterior end of carapace. Eyes as in male except length and diameters. Eye diameter (mm): PLE = 0.10, PME = 0.09, ALE = 0.08, AME = 0.06. Eye row length (mm): AE = 0.45, PE = 0.50. AME separation one eye

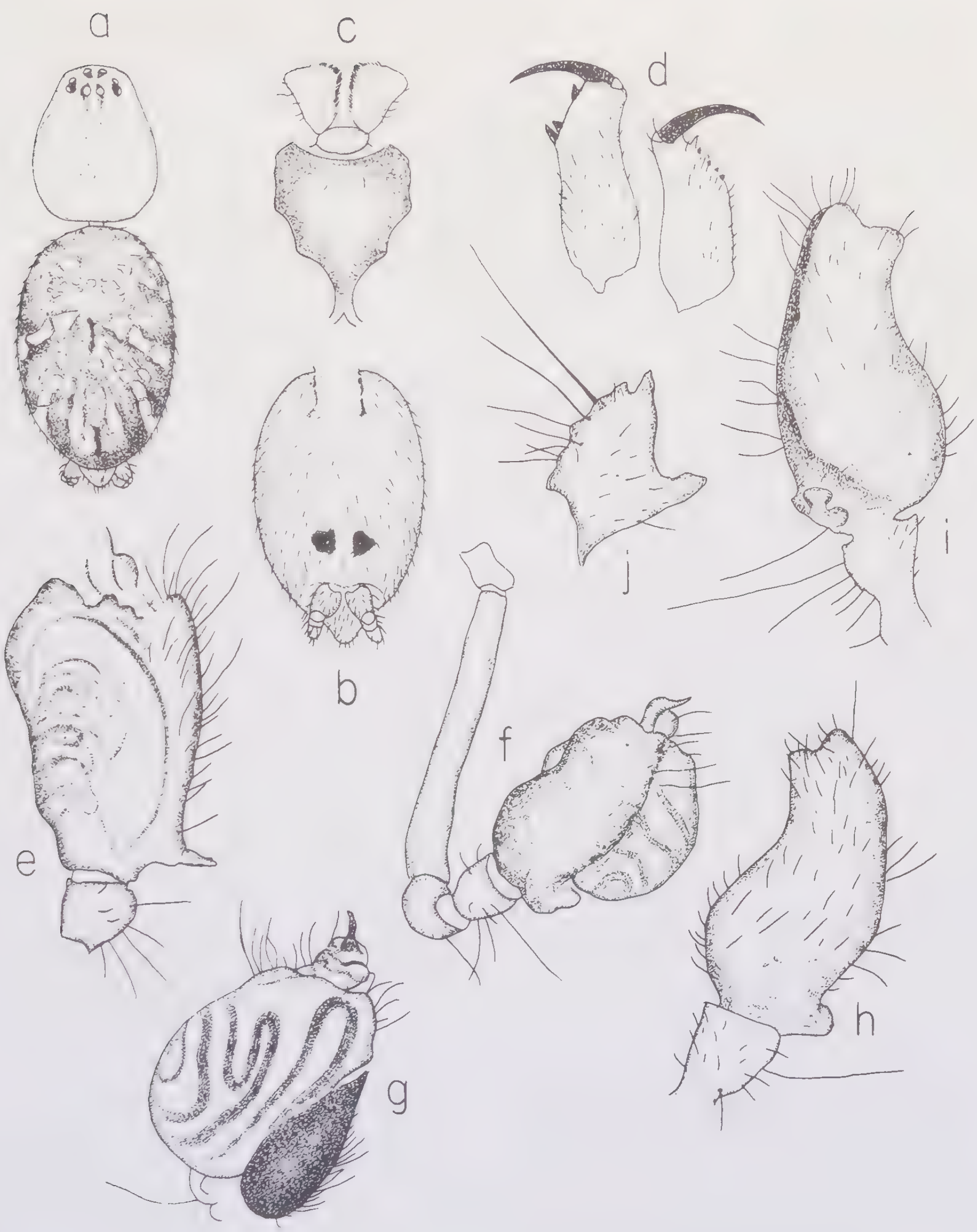


Fig. 327. Male *Tylorida striata* Thorell (a); abdominal venter (b); sternum, labium, and maxillae (c); chelicerae (d); lateral (ef) and ventrolateral (g) views of palpal organ; dorsal (h) and ventral (i) views of tibia and cymbium of pedipalp; and tibia showing apical processes and spines (j).

diameter. AME–ALE separation greater than one AME but less than one ALE diameter. PME separation one AME diameter and PME–PLE separation equal to one ALE diameter. Clypeus height twice AME–ALE separation. Sternum, chelicerae, and maxilla as in male. Labium wider than long, with shallow cavities medially and yellow transverse band. Legs shorter than male. Tibial spination in legs I = 0-0-1-2, II = 2-0-0-1, and with two trichobothria between dorsal setae, III = 1-0-1-0, IV = 2-0-1-0; metatarsi II = 2-0-0-0, II = IV = 1-0-1-0. Leg formula 1243. Palp yellow and single-clawed.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.52	0.52	2.32	2.68	0.92	8.96
2	1.60	0.44	1.32	1.48	0.64	5.48
3	0.88	0.28	0.56	0.60	0.44	2.76
4	1.60	0.32	1.12	1.20	0.50	4.74

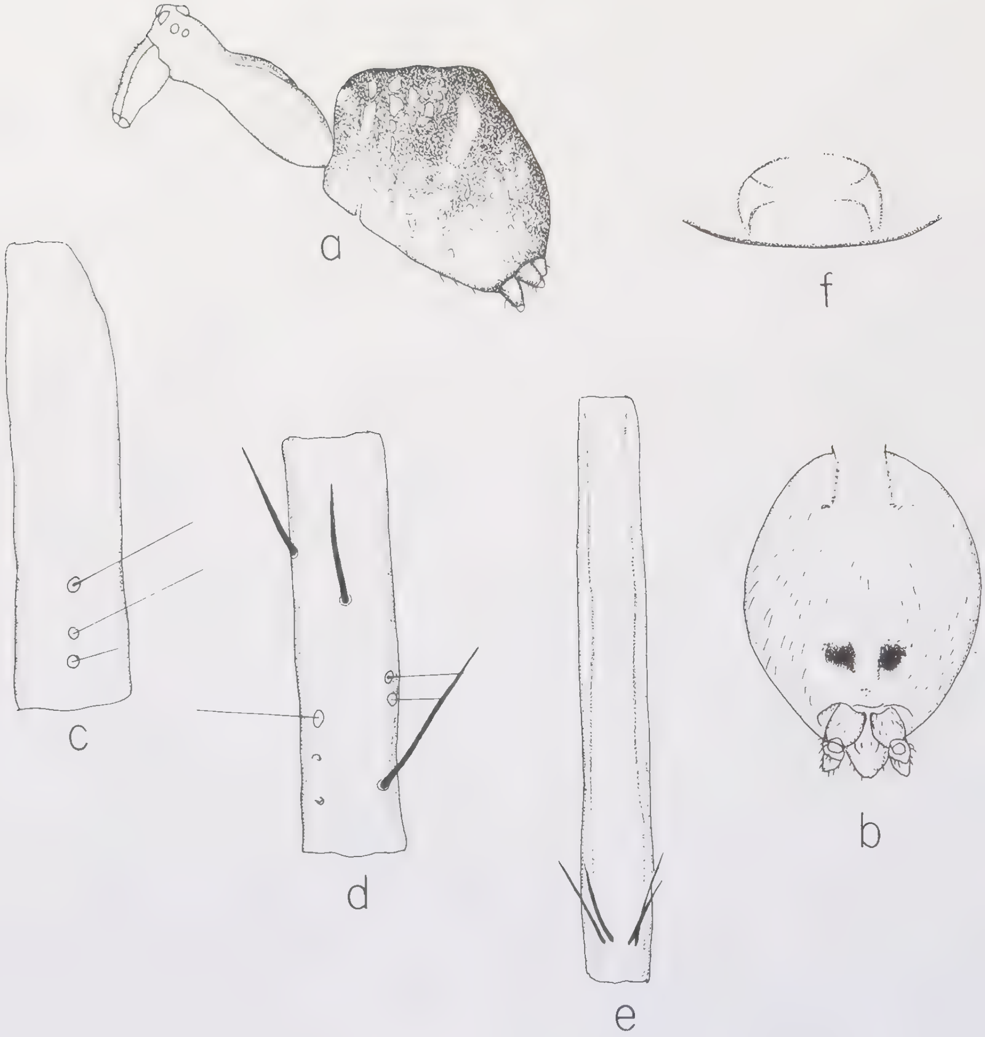


Fig. 328. Female *Tylorida striata* Thorell (a); abdominal venter (b); femur I (c); tibia II (d); tarsus I (e); and epigynum (f).

Abdomen sculptured as in male, basal one third elevated to a tubercle, venter with a black spot above spinnerets and a pair of longitudinal parallel bands above epigastric furrow. Spinnerets subequal in length, basal anterior segment 1.5 times bigger than the posterior.

Natural history: The male was collected by sweep net from the rice leaves of upland rice in the early morning (0700 hours) in August. The female was vial-tapped from its destroyed web with only three or four strands left from a wild eggplant *Solanum* sp. in the late morning (1135 hours) in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Kaliraya, Mahipon Vill., one male and one female, 6 August 1985, A.T. Barrion.

Distribution: Philippines (new record), Japan, Taiwan and Singapore.

Genus *Mesida* Kulczynski

Mesida Kulczynski, 1911. Res. Exped. Sci. Wichmann N. Guinea 5 (Zool. 3): 462.

Mesida Kulczynski is a small genus of metid spiders endemic in the Australian region. At present, it comprises only of five species, from Papua New Guinea (four species) and Australia (one species).

Members of the genus are similar to *Leucauge* White in having two rows of long curved trichobothria on femur IV only. *Mesida*, however, has branched trichobothria. Males have unique features. They bear clasping spur in the chelicerae, paracymbium with a small lateral branch, abdominal humps, if present, unpaired, and trochanter of the pedipalp exceptionally long. Female epigynum commonly with a longitudinal slit and a sclerotized recurved anterior epigynal margin.

Mesida is a new genus record for the Philippines.

Mesida realensis new species

(Fig. 329a–g)

Description:

Male: Total length 4.35 mm. Cephalothorax 1.85 mm long, 1.18 mm wide, 0.85 mm high. Abdomen 2.50 mm long, 1.40 mm wide, 1.25 mm high. Cephalothorax yellow with black eye margins, deep brown converging mark in fovea, and cephalic area distinctly narrower than thoracic area. Eight eyes in two equally long rows (0.68 mm), AE more strongly recurved than PE row. Eye diameter (mm): AME = 0.10, PME = PLE = 0.09, ALE = 0.08. Eye separation (mm): AME–AME = 0.05, AME–ALE = 0.15, PME–PME = 0.09, PME–PLE = 0.14. LE subcontiguous. MOQ squarish, length only slightly longer than anterior or posterior width. Clypeus height as long as one AME diameter. Sternum yellow with a black or gray band posteriorly, as long as wide or slightly wider than long. Labium yellowish with gray tinge, wider than long. Maxillae yellow, moderately broad apices diverging. Chelicerae short and stout at midlength, yellowish brown, promargin with three teeth and retromargin with four teeth. Midfrontal area with a clasping spur. Legs yellow, except black apices of tibiae, and long. Spination in femur I = 2-0-5/6-7, tibia I = 1-0-3-3, metatarsus I = 1-0-1-0; femur IV = 4-0-1-2, tibia IV = 1-0-2-1, metatarsus IV = 1-0-2-0. Metatarsus I/tarsus I = 3.82. Leg formula 1243. Pedipalp about 0.45 length of femur I, paracymbium with two processes, outer one sharply pointed apically and slightly directed upwards, inner one truncate at tip, partially scoop-like. Cymbium strongly rounded towards apex. Embolus thin, half-coiled on top of a membranous apical membrane, sharply pointed at tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.75	0.75	3.75	4.20	1.10	13.55
2	2.85	0.70	2.40	2.65	0.80	9.40
3	1.40	0.40	0.90	1.20	0.45	4.35
4	2.15	0.45	1.80	2.15	0.65	7.20
Pedipalp	0.70	0.18	0.21	–	0.60	1.69

Abdomen yellowish brown with scattered silvery marks, elongate, rounded at both ends, and with a black band posteriorly. Venter yellow with black longitudinal bands. Spinnerets small, slightly diverging apically, with a gray blotch laterally and a broad black spot on the posterolateral tip of abdomen, close to base of spinnerets.

Etymology: Named after type locality.

Natural history: All specimens were taken from kerosene light traps set along the borders of slash-and-burn upland rice in August.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 20 August 1984, M. Perez; three male paratypes, same data as holotype.

Distribution: Philippines.

Mesida matinika new species

(Fig. 330a–h)

Description:

Male: Total length 6.15 mm. Cephalothorax 2.35 mm long, 1.70 mm wide, 1.75 mm high. Abdomen 3.80 mm long, 1.50 mm wide, 1.60 mm high. Cephalothorax brown with black eye margins and pale grayish brown transverse fovea. Eight eyes in two rows, AE strongly recurved, and PE slightly recurved. Eye diameter (mm): AME = PME = 0.14, ALE = PLE = 0.13. Eye separation (mm): AME–AME = PME–PME = 0.10, AME–ALE = 0.15, LE contiguous, PME–PLE = 0.18. MOQ-AW = MOQ-PW, both shorter than length (0.43 mm). Clypeus height small, ca. 0.64 AME diameter. Sternum brown with median gray tinge, longer than wide, tapered posteriorly, anterior one half lined with fine slender hairs. Labium brownish yellow, apically rounded, longer than wide. Maxillae yellowish brown, with brownish serrula, longer than wide, and broadest apically. Chelicerae yellowish brown with a long, thin, slender clasping spur. Promargin bears three teeth and retromargin has four. Fang with a dorsosubbasal spur. Legs long and slender, yellowish brown, with numerous small teeth. Spination in femur I = 2-0-6-7, tibia I = 2-0-3-2, metatarsus I = 1-0-1-1; femur IV = 4-0-2-3, tibia IV = 1-0-2-2, metatarsus IV = 1-0-2-0. Venter of femur I with numerous small teeth, metatarsus I with 39 peg-like teeth in two rows. Metatarsus I/tarsus I = 4.73. Leg formula 1243. Pedipalp ca. 0.54 of femur I length, tibia with a long dorsal spine. Paracymbial processes almost equally long, inner one more curved than the outer one viewed dorsally, outer process pointed and vertical seen from back of cymbium. Inner process small, zigzag-like towards apex viewed retrolaterally. Embolus and conductor process bifid apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.80	1.00	4.60	5.20	1.10	16.70
2	3.45	0.75	3.15	3.55	0.95	11.85
3	1.95	0.50	1.20	1.55	0.60	5.80
4	3.00	0.55	2.20	2.65	0.65	9.05
Pedipalp	1.00	0.28	0.38	–	0.93	2.59

Abdomen elongate, yellow, with silvery lateral band, black spot anteriorly and posteriorly, and one each middorsolaterally. Venter yellow, with gray tinge and a pair of oblique black spots at midlength. Spinnerets black, including colulus.

Etymology: Named after the spinous legs.

Natural history: The holotype male was collected by kerosene light trap set in a slash-and-burn ricefield in September.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon

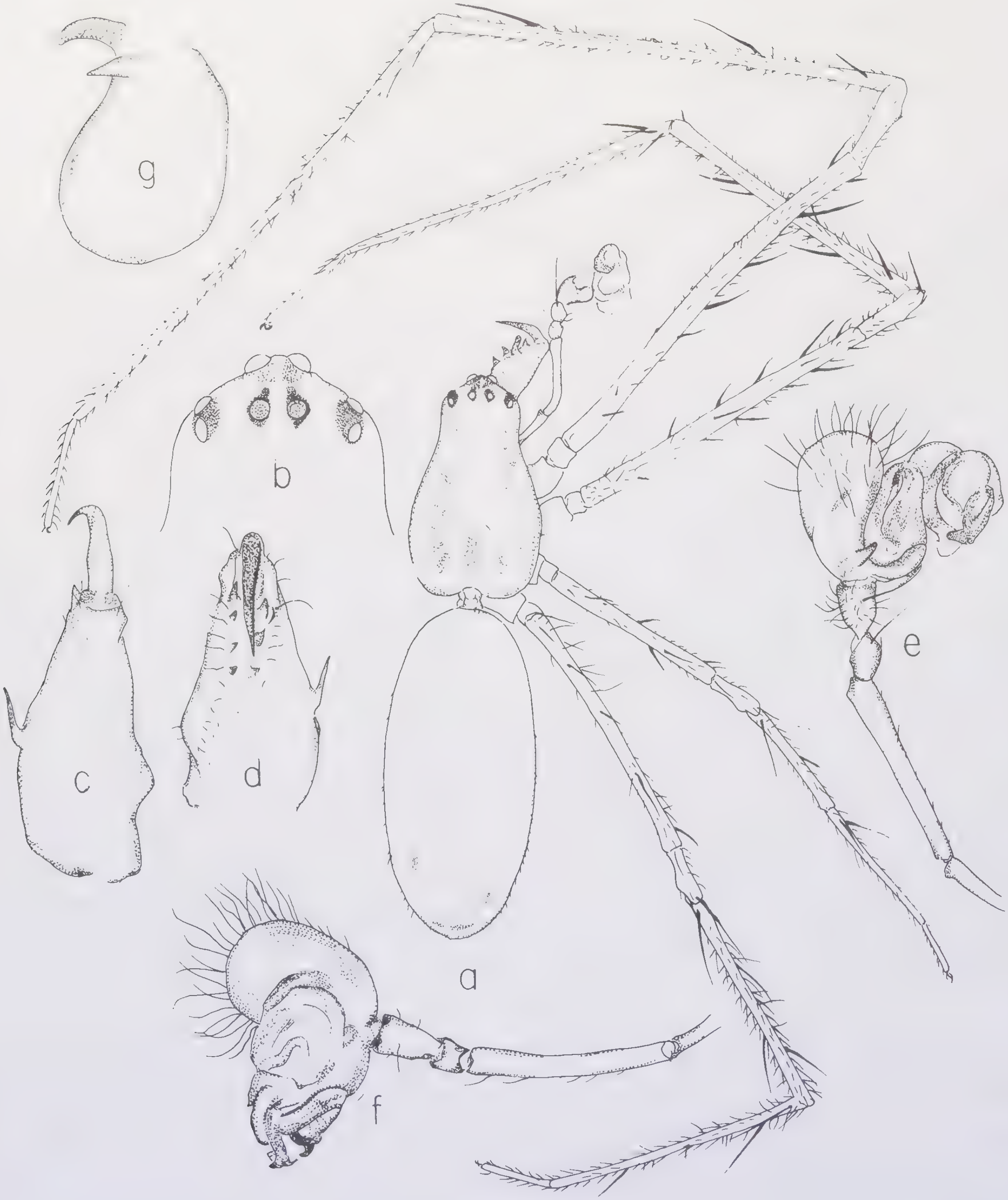


Fig. 329. Male *Mesida realensis* n. sp. (a); eye pattern (b); lateral (c) and ventral (d) views of right chelicera; retrolateral (e) and ventral (f) views of pedipalp; and ventrolateral view of paracymbium (g).

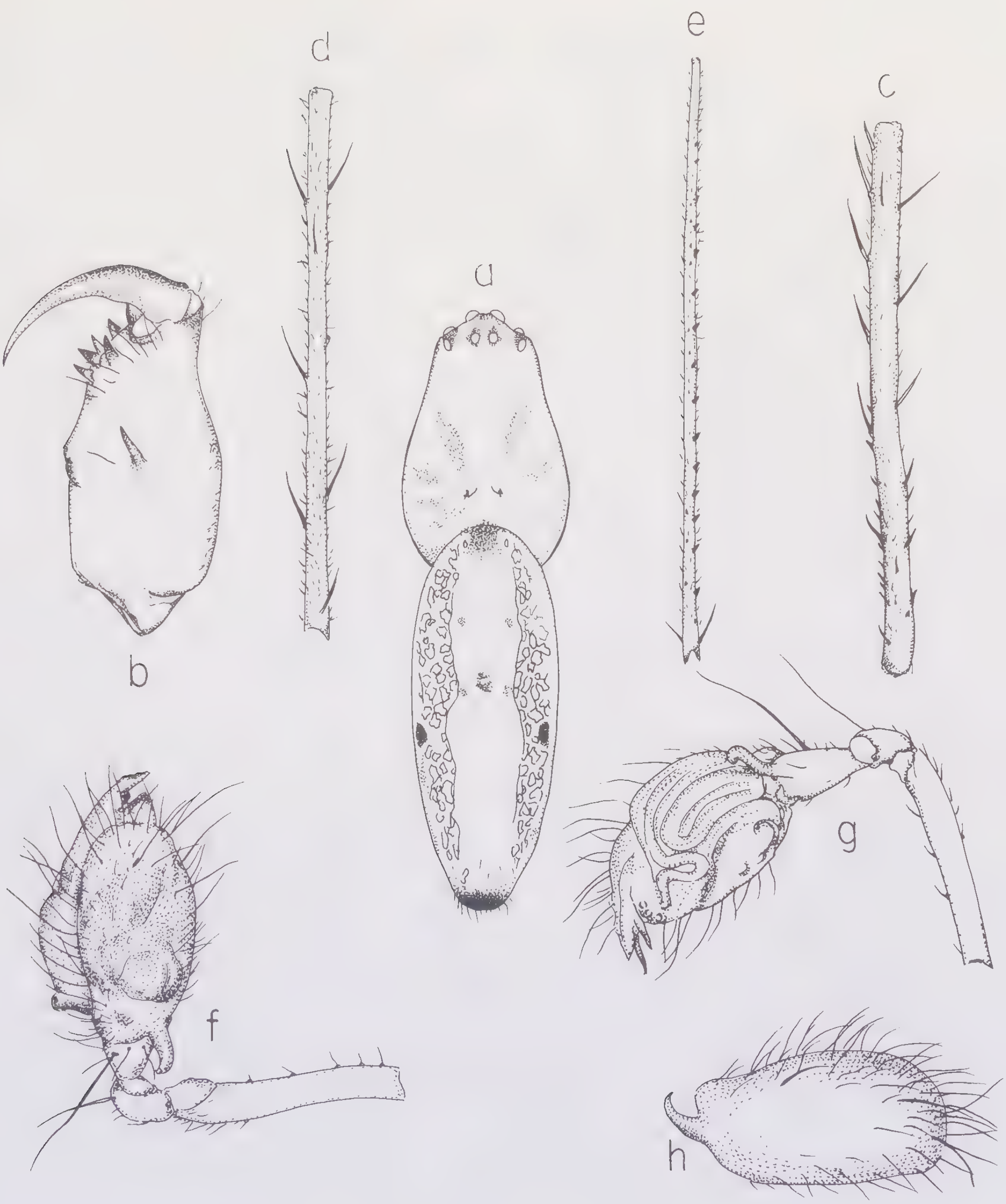


Fig. 330. Male *Mesida matinika* n. sp. (a); chelicera showing clasping spur (b); dorsal view of femur I (c); tibia I (d); venter of metatarsus I (e); retrolateral (f) and ventral (g) views of pedipalp; and paracymbium (h).

Prov., Real, Llavac Vill., holotype male, 18 September 1984, M. Perez.
Distribution: Philippines.

Genus *Leucauge* White

Leucauge White, 1841. Ann. Mag. Nat. Hist. 7(1): 473.
Argyroepeira Emerton, 1884. Trans. Conn. Acad. Arts. Sci. 6: 331.
Leucauge Gravely, 1921. Rec. Indian Mus. 22: 450.

Genus *Leucauge* White occurs in all regions except the Nearctic and comprises approximately 25 species. Members of the genus have the cephalothorax constricted laterally towards the cephalic area, producing

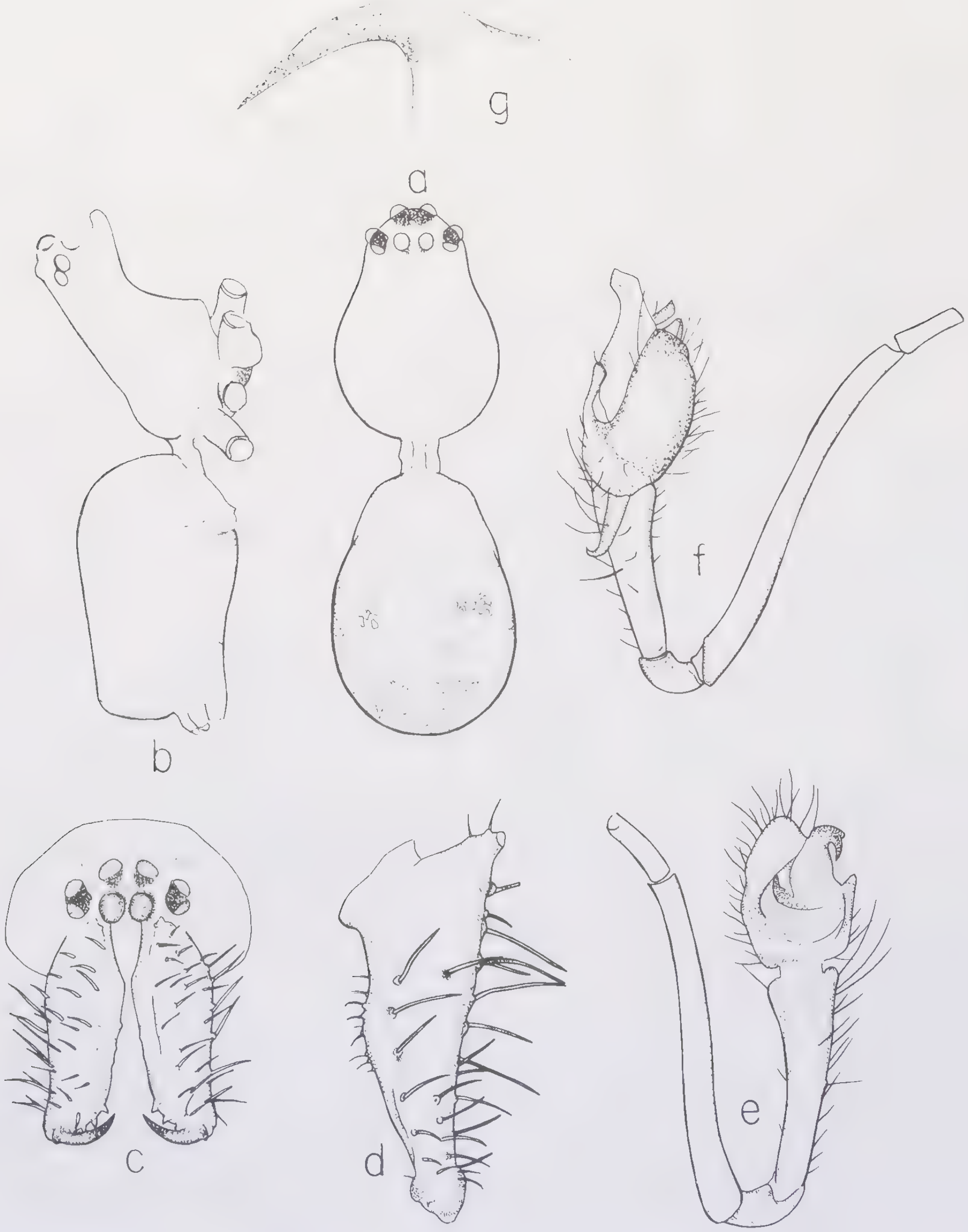


Fig. 331. Male *Leucauge parangscipinia* n. sp., dorsal (a) and lateral (b) views; eye pattern and chelicera in frontal view (c); side view of chelicera (d); ventral (e) and retrolateral (f) views of pedipalp; and close-up of cymbial apophysis (g).

a prominently broad thoracic area, and truncate anteriorly. Fovea deep and directed posteriorly. Legs I and II long and slender, femora IV with a double fringe of hairs or trichobothria prolaterally in the basal one half. Abdomen silvery, ca. twice as long as wide, anterodorsally with zero or one or more pairs of tubercles. Epigastric plate without any furrow.

Three species – *L. fastigata* (Simon), *L. venusta* (Walckenaer), and *L. tredecimguttata* (Simon) – had been reported in the Philippines (Roewer 1954). *Leucauge decorata* (Blackwall) was recorded later (Barrion and Litsinger 1984).

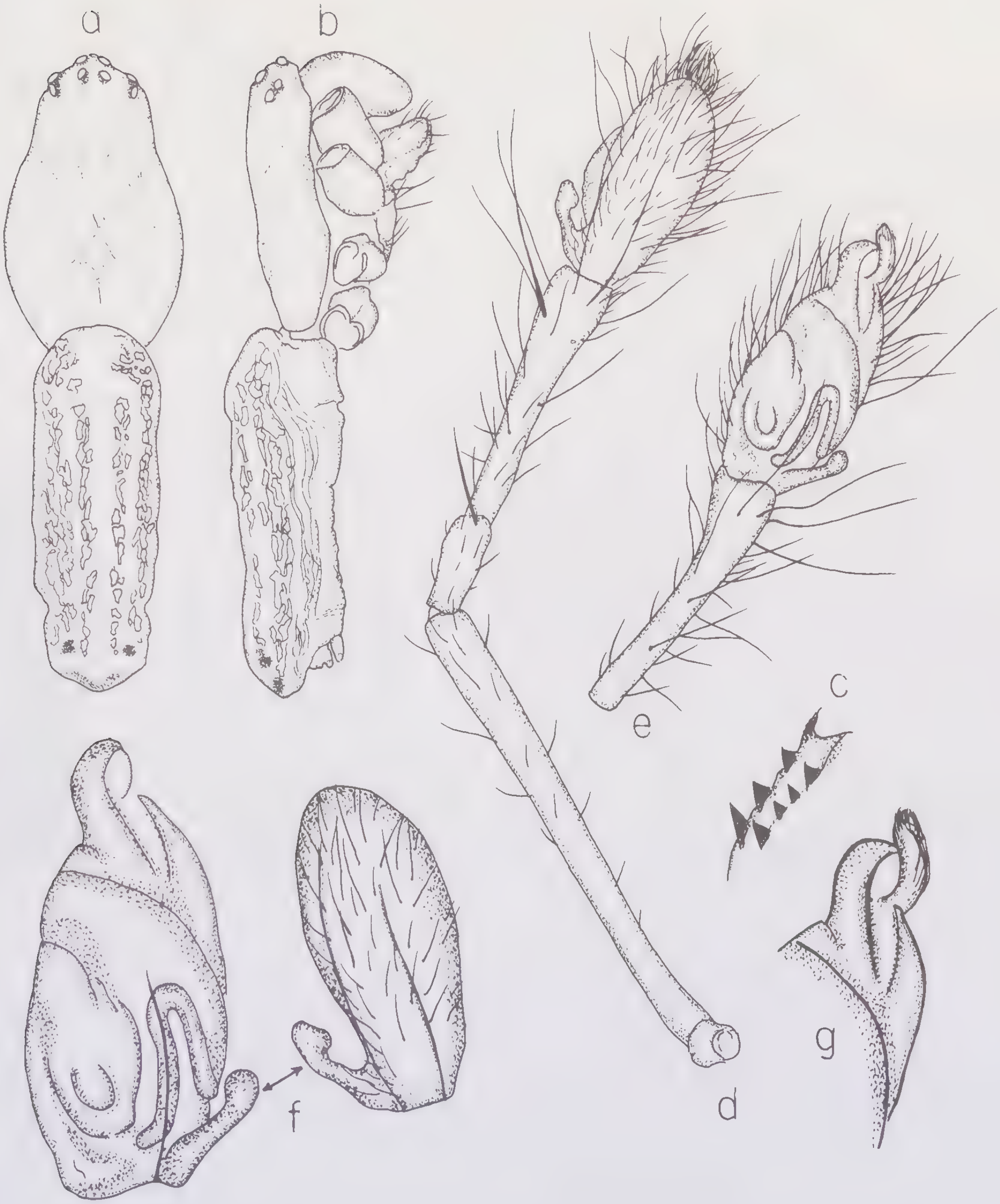


Fig. 332. Male *Leucauge decorata* (Blackwall), dorsal (a) and lateral (b) views of the body; cheliceral teeth (c); retrolateral (d) and ventral (e) views of palpal organ; paracymbium (f); and embolus and conductor process (g).

Leucauge parangscipinia new species
(Fig. 331a–g)

Description:
Male: Total length 2.45 mm. Cephalothorax 1.15 mm long, 0.80 mm wide, 0.60 mm high. Abdomen 1.30 mm long, 0.80 mm wide, 0.80 mm high. Cephalothorax yellow-brown, with black eye margins, sloping at 45° angle, higher in the cephalic than thoracic region. Eight eyes in two rows, strongly recurved AE row longer (0.47 mm) than the straight to procurved PE row (0.45 mm). Eye diameter (mm): AME = 1.00, ALE = PME = PLE = 0.08. Eye separation (mm): AME–AME = 0.04, AME–ALE = 0.08, PME–PME = 0.05, PME–PLE = 0.09. LE subcontiguous. MOQ almost a square. Clypeus almost occupied by AME. Sternum gray brown, slightly longer than or as long as wide, heart-

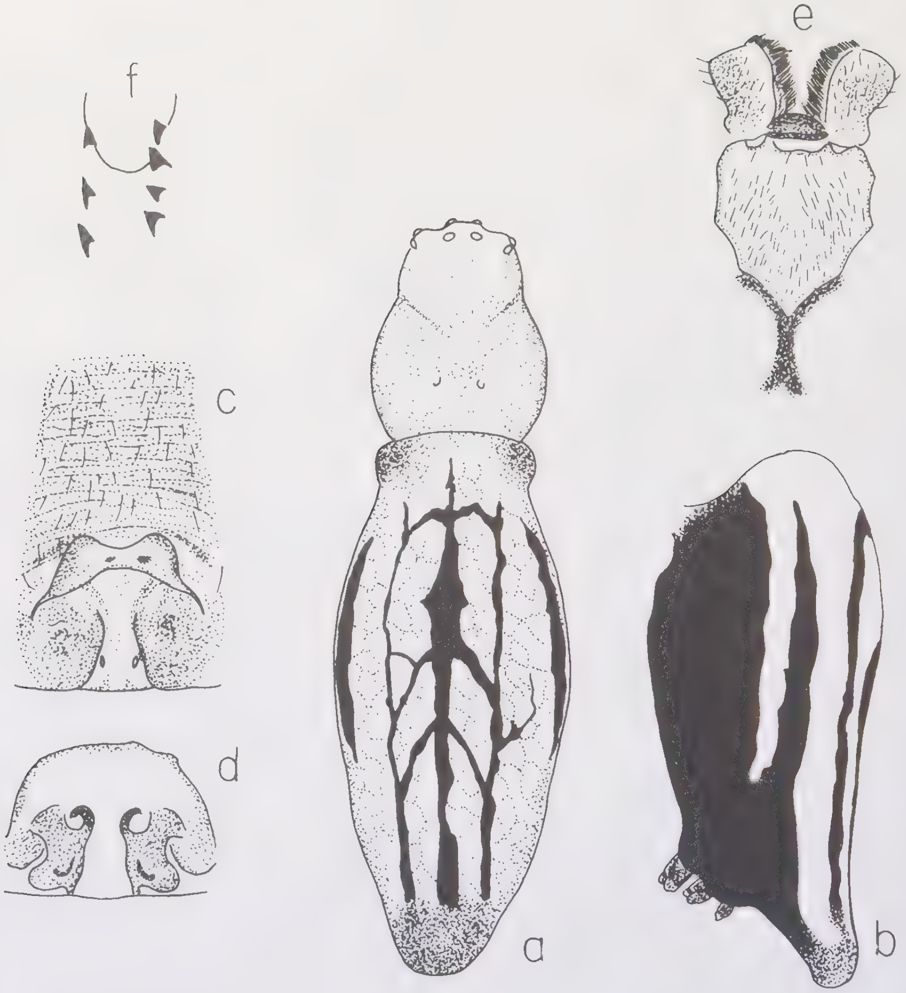


Fig. 333. Female *Leucauge decorata* (Blackwall) (a); side view of abdomen (b); dorsal (c) and ventral (d) views of epigynum; sternum (e); and cheliceral teeth (f).

shaped, rounded between coxae IV posteriorly. Labium gray basally and yellow apically, wider than long. Maxillae yellowish gray in apical one half to two thirds and yellow basally, apex obliquely truncate, distantly spaced from cheliceral base by about one half of carapace length. Chelicerae strongly spinous, with about 43 spines dorsally and seven to ten in two rows midventrally. Basodorsal spine close to AME very long. Promargin with three large teeth and three small teeth in retromargin. Legs yellowish brown, with yellow femora and gray to black marks on apices of segments, femur IV with two rows of trichobothria. Leg formula 1243. Pedipalp 1.6 times longer than femur I, femur twice longer than tarsus, and tibia three times length of patella. Ventral paracymbium obliquely directed posteriorly, with its pointed tip curved upward, retrolateral paracymbium relatively parallel-sided and truncated at tip. Terminal apophysis with a short curved process pointed outwards and a long sharply pointed one directed inwardly. Cymbium obliquely cut apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.40	0.40	1.15	1.10	0.45	4.50
2	1.30	0.35	1.05	0.90	0.45	4.05
3	0.60	0.20	0.40	0.45	0.33	1.98
4	1.00	0.20	0.70	0.80	0.30	3.00
Pedipalp	1.00	0.18	0.55	–	0.50	2.23

Abdomen subglobular, pale yellow anteriorly, with a broad gray to black band in cardiac area running midlongitudinally to four transversely broad posterior gray bands, and a pair of spherical gray spots between the two at about midlength. Lateral abdomen grayish yellow with a pale yellow broad spot posteriorly. Venter gray except yellow epigastric furrow and a broad median transverse yellow band. Spinnerets compact, converging apically, all uniformly gray to black.

Etymology: Named after its similarity to the reduviid genus *Scipinia*, an assassin bug.

Natural history: The holotype material was collected from pitfall trap set in slash-and-burn upland rice in

December. The paratype was taken from a kerosene light trap in January.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 28 December 1984, A.T. Barrion and M. Perez; Laguna Prov., Siniloan, Magsaysay Vill., paratype male, 12 January 1985, R. Apostol.

Distribution: Philippines.

Leucauge decorata (Blackwall)

(Figs 332a–g, 333a–f)

Tetragnatha decorata Blackwall, 1864. Ann. Mag. Nat. Hist. 14(3): 44.
Nephila angustata Stoliczka, 1869. J. Asiat. Soc. Beng. 38: 241.
Tetragnatha decorata O. Pickard-Cambridge, 1869. J. Linn. Soc. 10: 389.
Meta celebesiana Thorell, 1877. Ann. Mus. Civ. Genova. 10: 442.
Argyroepeira celebesiana Workman, 1896. Malays. Spiders: 52.
Leucauge decorata Simon, 1906. Ann. Soc. Ent. Fr. 75: 282.

Redescription:

Male (Fig. 332a–g): Total length 4.80 mm. Cephalothorax 1.70 mm long, 1.25 mm wide, 0.90 mm high. Abdomen 3.10 mm long, 1.00 mm wide, 1.10 mm high. Cephalothorax yellowish brown with black eye margins, moderately elevated in the cephalic area and deep in the transverse fovea. Eight eyes in two rows, strongly recurved AE shorter than the straight PE row. Eye diameter (mm): AME = ALE = PME = PLE = 0.09. Eye separation (mm): AME–AME = 0.06, AME–ALE = 0.15, PME–PME = 0.08, PME–PLE = 0.14. LE contiguous. MOQ wider behind (0.25 mm) than in front (0.23 mm), anterior width about 0.82 of length (0.28 mm). Clypeus height 1.44 times AME diameter. Sternum heart-shaped, longer than wide, yellowish brown with slight gray tinge, and anterior one fourth with 14 setae in two transverse rows of eight and six, posterior end tapered, and anterior margin slightly concave at base of labium. Labium wider than long, apical one half swollen and yellow, basal one half light brown. Maxillae longer than wide, yellow with a black truncated anterior margin. Chelicerae vertical, short, and stout, yellowish brown with darkened area at fang base. Promargin with three teeth and four in the retromargin. Legs long and slender, yellow with black apices. Spination in femur I = 1-0-5-2, tibia I = 2-0-3-2, metatarsus I = 1-0-1-1. Femur IV with at least 30 trichobothria. Metatarsus I/tarsus I = 4.27. Leg formula 1243. Pedipalp yellow, with brownish palpal organ, ca. 0.46 length of femur I, tibia bears at least 15 long setae in apical one half and five trichobothria in basal one half, paracymbium apically curved upward, producing an obliquely truncate tip as viewed dorsally, embolic and conductor division with a lanceolate embolus, a broadly expanded process, and a rough membranous process apically.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.10	1.05	6.50	7.05	1.65	22.35
2	4.40	0.90	4.15	4.40	1.20	15.05
3	2.45	0.50	1.45	1.90	0.70	7.00
4	4.00	0.60	3.00	3.45	0.85	11.90
Pedipalp	1.10	0.30	0.70	–	0.68	2.78

Abdomen elongate, rounded at both ends, yellow, with four longitudinal silvery bands dorsally marked with a black spot on each shoulder and four black spots posteriorly, posteriormost band sometimes contiguous, forming a transverse band. Laterals with pale black tinge, abdominal tip strongly rounded and exserted from spinnerets, with black terminal segments.

Female (Fig. 333a–f): Total length 7.32 mm, cephalothorax 2.44 mm long, 1.77 mm wide, 1.11 mm high. Abdomen 4.88 mm long, 2.22 mm wide, 3.11 mm high. Cephalothorax yellow, with black eye margins and brownish clypeal margins, cephalic area rather elevated to a V-shaped appearance and narrower than the broad thorax, fovea a deep transverse groove with a trifid arm posteriorly. Eight eyes in two recurved rows, strongly recurved AE as long as the slightly recurved PE (0.90 : 0.90 mm), diameter in decreasing order AME = ALE = 0.12 mm, PME = 0.10 mm, PLE = 0.09 mm. Lateral eyes on a small tubercle and close to each other. AME separation 1.5 eye diameter. AME–ALE separation twice eye diameter. PME separation one eye diameter. PME–PLE separation equal to AME–ALE separation. Median ocular quadrangle wider behind than in front (0.32 : 0.30 mm). Clypeus height one AME diameter. Sternum typical of *Leucauge*, except for the deeply indented margin opposite coxa III, long posterior end extended beyond coxa IV, and bears apical transverse row of ca. 18 erect brown hairs. Labium brown, wider than long, basal one half with two transverse grooves, apical one half bulbous and rounded, with four long brown hairs. Maxillae yellow with a broad distal end, narrow base, and indented opposite base of labium. Dorsal apical one half of maxilla with ca. 10–13 long brown hairs and inner margin with dense scopulae. Serrulae present. Chelicerae yellow, brownish towards teeth and fang, promargin and retromargin with three and four teeth, respectively. Legs brown to yellowish brown, hirsute, with some stout spines in femur, patella, tibia, and metatarsus, distal ends of segments ringed black, dorsobasal one-fifth to one third of femur I with two rows of ca. 13 trichobothria and seven prolateral spines, II with ca. 10–11 III with six or seven, and prolateral basal one half of femur IV with ca. 33 trichobothria. Tibial spination: I = 3-0-3-3, II = 2-0-3-2, III = 1-0-0-0 and IV = 2-0-2-2; tarsus three-clawed with 7–15 and one to three teeth in the superior and inferior claws, respectively. Leg formula 1243. Pedipalp yellow, except brown tarsus with many spines and length longer than femur, base of tarsus with six setae arranged spirally.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.72	1.11	4.38	4.61	1.50	16.32
2	3.72	0.94	3.05	3.33	1.11	12.15
3	2.11	0.55	1.27	1.66	0.80	6.39
4	3.77	0.75	2.61	3.05	1.00	11.18
Pedipalp	0.90	0.35	0.62	–	0.95	2.82

Abdomen silvery green with black spots in each of the two anterodorsal humps and the upwardly directed caudal hump, elongated, and bears leaf-like folium out of black and silvery white lines. Venter with a pair of parallel longitudinal silvery white bands in between epigastric furrow and spinnerets, and four silvery round spots around the spinnerets. Spinnerets yellowish brown, anterior pair close to each other, posterior pair shorter and thinner than the anterior and more widely separated. Epigynum with a quadrate to rectangular brownish yellow band anterior to anterior epigynal margin (AEM), strongly recurved, with a hat-like band bearing a median cleft, median scape moderately broad and truncate towards tip, narrowed basally, and constricted at midhalf.

Natural history: The females were commonly D-Vac- or sweep-net-collected from ricefields and grassy areas in August to April. Males, however, were taken from yellow pan or kerosene light trap samples.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, two females, two males, and eight immatures, 10 January 1978, M. Perez; Batangas Prov., Tanauan, Cale Vill., six females and one male, 7 March 1979, A.T. Barrion; *Palawan Is.*, Palawan Prov., Aborlan, Cabigaan, five males and two immatures, A.T. Barrion; *Panay Is.*, Iloilo Prov., Oton, three females and two males, 17–18 February 1981, A.T. Barrion; *Mindanao Is.*, Misamis Oriental Prov., Mat-i, two females and two males, 9 September 1987, E. Libetario. **THAILAND:** Prachinburi, PRRI Station, one female and one male, 23 August 1989, A.T. Barrion. **BANGLADESH:** Dacca, Joydevpur, one male, 29 October 1985, A.T. Barrion.

Distribution: South and Southeast Asia.

Leucauge mahabascapea new species

(Fig. 334a–e)

Description:

Female: Total length 5.55 mm. Cephalothorax 2.10 mm long, 1.70 mm wide, 1.10 mm high. Abdomen 3.45 mm long, 2.00 mm wide, 1.50 mm high. Cephalothorax yellowish brown with black eye margins. Eyes in two rows, AE strongly recurved and PE row straight to slightly recurved. Eye diameter (mm): AME = ALE = 0.11, PME = PLE = 0.10. Eye separation (mm): AME–AME = 0.05, AME–ALE = PME–PLE = 0.23, LE contiguous, PME–PME = 0.13. MOQ-AW almost as long as length, both shorter than MOQ-PW (0.33 mm). Clypeus height about one AME diameter or a little less. Sternum brown, with a black stripe posteriorly, longer (1.00 mm) than wide (0.90 mm). Labium brown, with yellowish brown apex, distinctly wider than long. Maxillae longer than wide, broadest towards truncate apex. Chelicerae yellowish brown, moderately robust. Promargin with three teeth, retromargin with four, subapical tooth very close to the apical tooth. Legs yellow-brown, with reddish brown patches on the midlaterals of patellae and apices of tibiae and metatarsi. Spination in femur I = 2-0-5/6-6/7, tibia I = 1-0-3-3, metatarsus I = 0-0-1-1. Femur IV with about 17 trichobothria. Femur I as long as tibia I. Metatarsus I/tarsus = 3.30. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.55	0.90	3.55	3.80	1.15	12.95
2	2.90	0.80	2.50	2.80	0.90	9.90
3	1.70	0.50	1.10	1.30	0.55	5.15
4	2.75	1.00	2.00	2.30	0.70	8.75
Pedipalp	0.70	0.20	0.50	–	0.75	2.15

Abdomen elongate, silvery yellow with posterior black band. Anterior and posterior ends both rounded, without humps. Venter with two pairs of gray to black longitudinal stripes running toward tip of abdomen and upward to the black posterior band. Colulus distinct, bears four setae inside it. Epigynum with a long slender apically truncate median scape, forming a pair of large ovoid orifices and a pair of moderately large plates adjacent to the epigastric furrow.

Etymology: Named after the long (‘mahaba’) scape.

Natural history: The holotype female was taken from kerosene light traps set in slash-and-burn ricefields in August.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 28 August 1984, M. Perez and R. Apostol.

Distribution: Philippines.

Leucauge fastigata (Simon)

(Fig. 335a–f)

Meta fastigata Simon, 1877. Anns. Soc. Entomol. Fr. 7(5): 79.

M. fastuosa Thorell, 1877. Annal. Mus. Civ. Genova 10: 413.

Callinethis elegans Thorell, 1887. Annal. Mus. Civ. Genova 25: 134.

Argyroepeira fastigata Simon, 1894. Hist. Nat. Araign. 1(3): 729.

Leucauge fastigata Simon, 1905. Mitt. Naturn. Mus. Hamburg 22(2): 61.

L. elegana Sherriffs, 1919. Ann. Mag. Nat. Hist. 4(9): 233.

L. fastuosa Roewer, 1938. Mem. Mus. Hist. Nat. Belg. (H.S.) 3(19): 48.

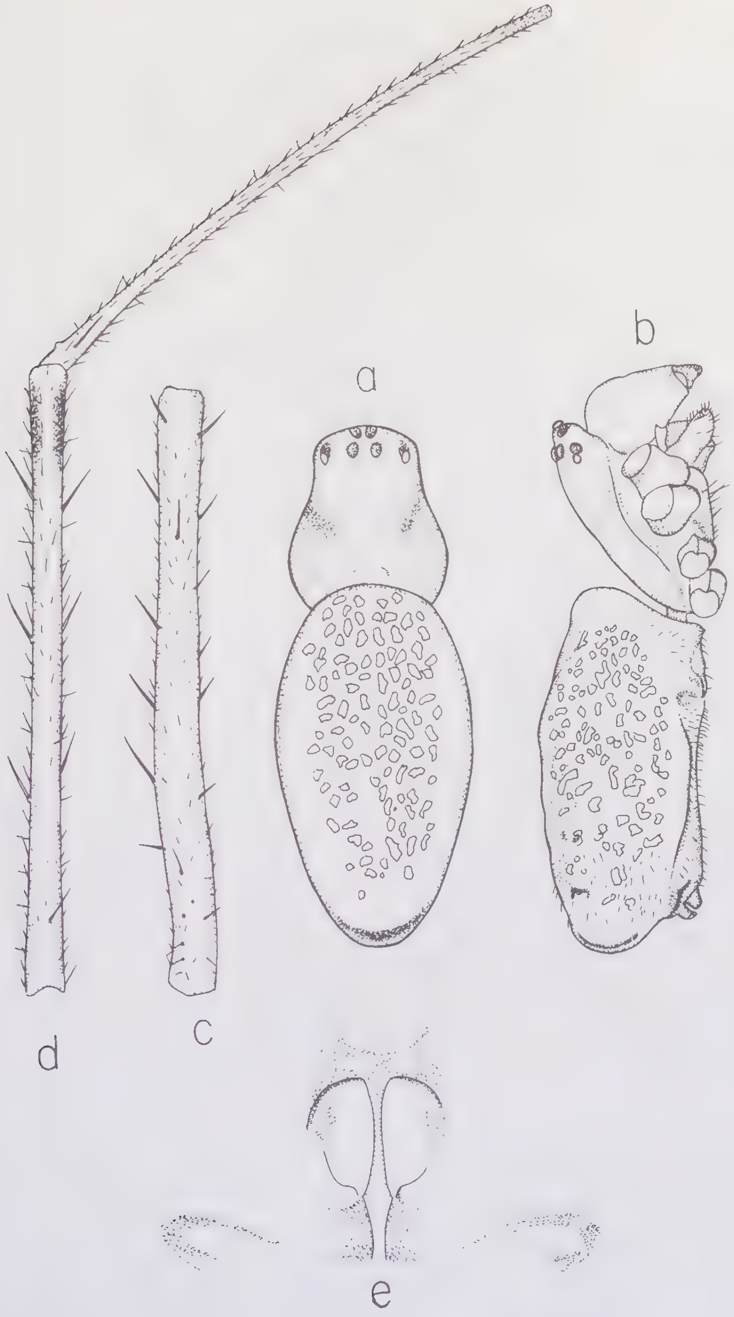


Fig. 334. Female *Leucauge mahabascapea* n. sp., dorsal (a) and lateral (b) habitus; dorsal views of femur I (c), tibia I and metatarsus I (d); and epigynum (e).

Redescription:
Female: Total length 8.70 mm. Cephalothorax 2.70 mm long, 2.40 mm wide, 1.40 mm high. Abdomen 6.00 mm long, 3.10 mm wide, 3.00 mm high. Cephalothorax pale yellow to yellowish brown with black eye margins. Cephalic area not markedly narrower than the thoracic area. Eight eyes in two recurved rows, AE row slightly longer than PE row. Eye diameter (mm): AME = PME = ALE = 0.15, PLE = 0.09. Eye separation (mm): AME–AME = 0.15, AME–ALE = 0.45, ALE–PLE = 0.09, PLE–PME = 0.45, PME–PME = 0.13. MOQ slightly longer than wide, narrower behind than in front. Clypeus height almost one AME diameter. Sternum heart-shaped, brownish yellow, with gray-brown marks in midposterior one half, tapers to a point between coxae IV. Labium dark brown with pale yellow distal margin, as long as wide. Maxillae yellowish brown, longer than wide, and bearing distinct scopulae. Chelicerae strong and stout with small boss, promargin with three teeth and four in the retromargin. Legs pale yellowish brown, with black markings on apices of segments and black thick brush of hairs on tibia IV. Spination in femur I =

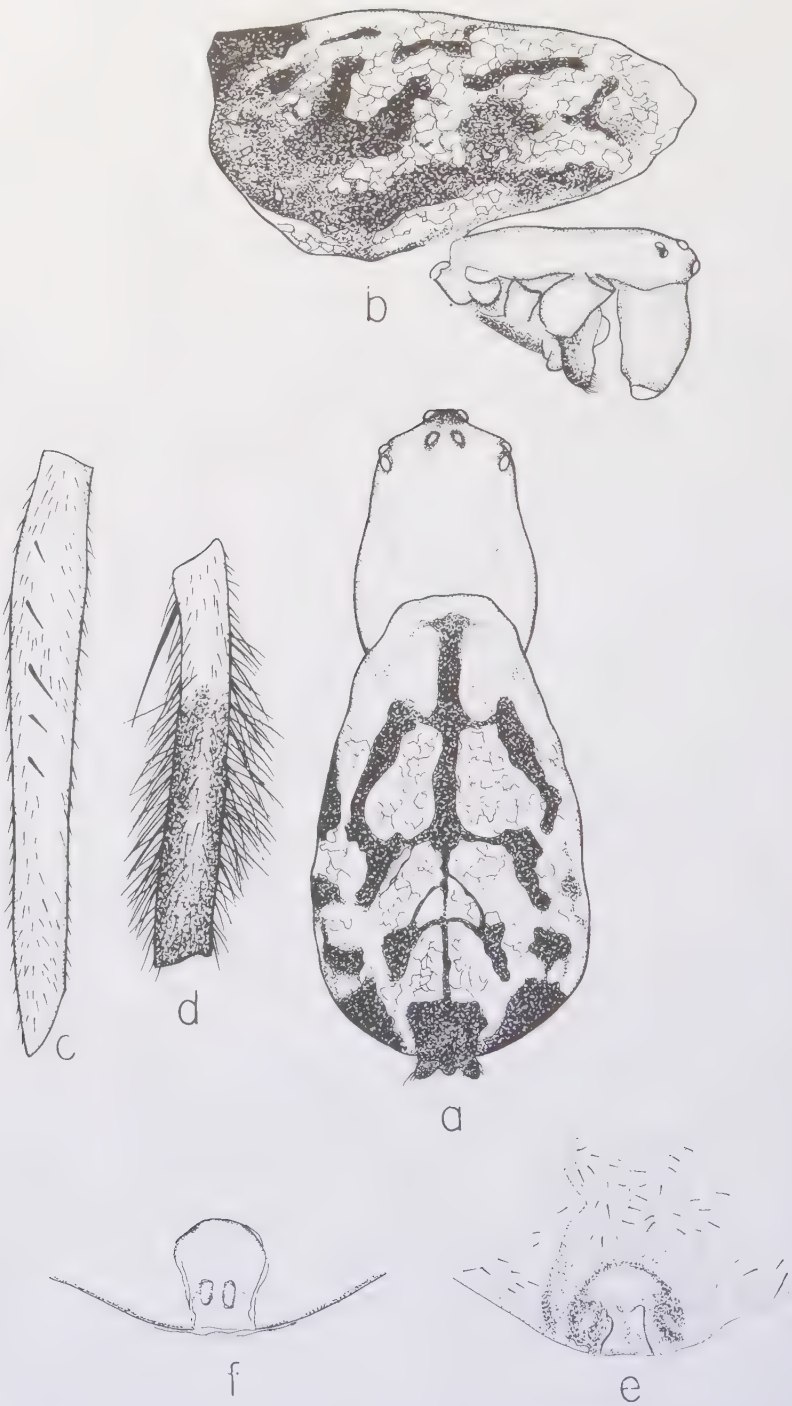


Fig. 335. Female *Leucauge fastigata* (Simon), dorsal (a) and lateral (b) habitus; prolateral view of femur I (c); retrolateral view of tibia IV (d), and dorsai (e) and ventral (f) views of epigynum.

= 0-0-7-0, tibia I = 2-0-2-3, metatarsus I = 1-0-1-0. Metatarsus I/tarsus I = 3.19. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.50	1.20	4.00	4.15	1.30	15.15
2	3.90	1.10	3.00	3.45	1.10	12.55
3	2.40	0.60	1.40	1.60	0.90	6.90
4	3.60	0.80	2.20	3.20	1.00	10.80
Pedipalp	1.10	0.40	0.80	–	1.20	3.50

Pedipalp almost as long as femur IV, ca. 0.78 length of femur I.

Abdomen silvery white and orange-red with black markings, oblongate and broadest posteriorly, anterior end rounded to slightly truncate, strongly overhanging the carapace. Venter with a pair of bracket-like patches, with silvery spots between epigastric furrow and spinnerets. Epigynum with a recurved anterior epigynal margin anterior to the distinct scape, apex of scape truncately wide and distinctly narrowed basally, similar to a rocket.

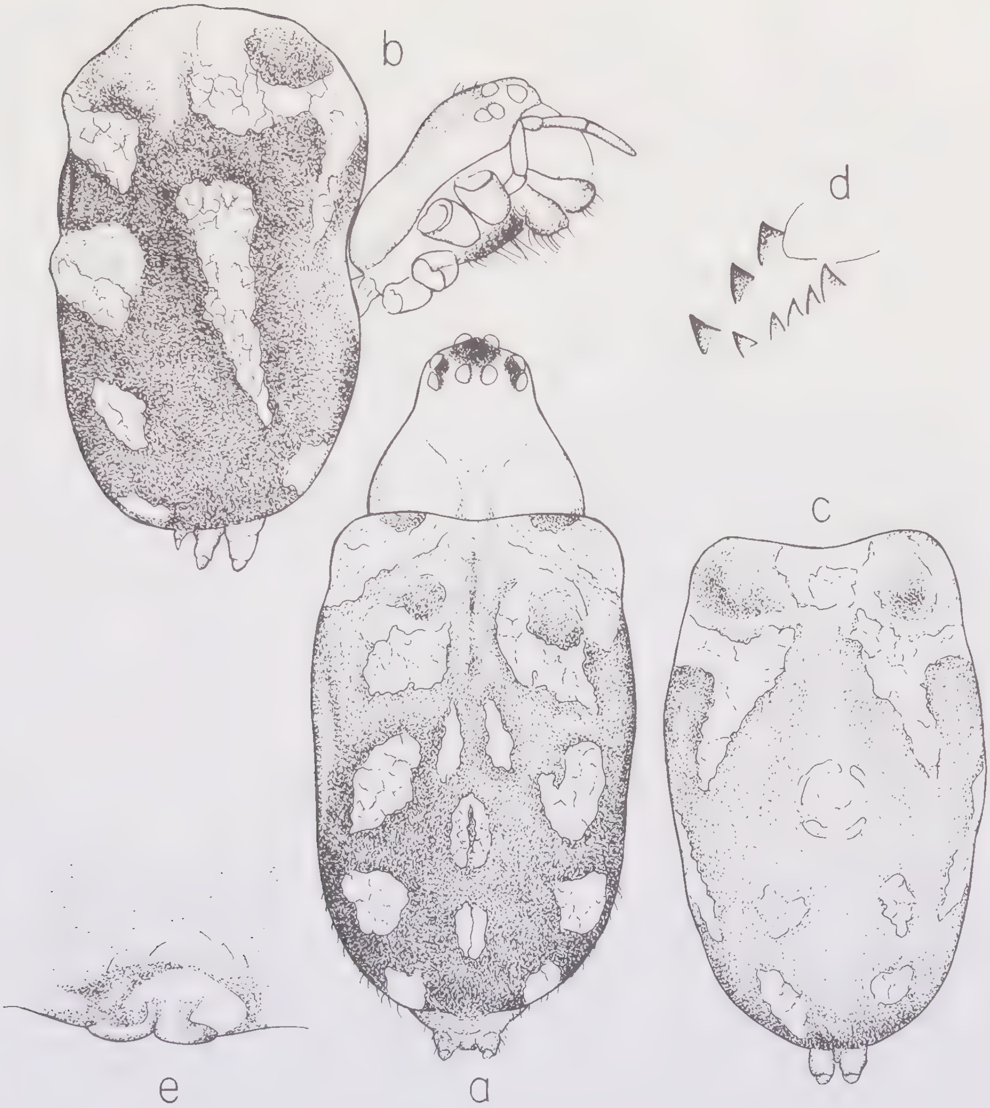


Fig. 336. Female *Leucauge argentina* (Van Hasselt), dorsal (a) and lateral (b) habitus; abdominal venter (c); cheliceral teeth (d); and epigynum (e).

Natural history: One female was collected from upland rice in August and the other was from an abundantly irrigated ricefield in July.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., one female, 14 August 1984, A.T. Barrion; *Palawan Is.*, Palawan Prov., Puerto Princesa, Langogan Vill., one female, 28 July 1985, A.T. Barrion.

Distribution: Singapore, Indonesia, Thailand, Philippines, India, Sri Lanka and Burma.

Leucauge argentina (Van Hasselt)

(Fig. 336a–e)

Theridion argentina Van Hasselt, 1882. In Veth, Midd. Sumatra Aran. 4(11): 34.

Argyroepeira argentina Thorell, 1890. Ann. Mus. Civ. Genova 28: 199.

Argyroepeira argentina Workman, 1896. Malays. Spid. 54: 54.

Redescription:

Female: Total length 5.90 mm. Cephalothorax 1.90 mm long, 1.70 mm wide, 1.10 mm high. Abdomen 4.00 mm long, 2.70 mm wide, 2.60 mm high. Cephalothorax yellow with black eye margins, pale gray-brown to black hind cephalic area running down through midthorax and margins of thoracic area. Cephalic area higher than the wide thorax, with a transverse depression along fovea and pit-like cavities posterior of cephalic portion. Eight eyes in two rows, strongly recurved AE row shorter than the straight to slightly recurved PE row. Eye diameters almost subequal in size, AE equally spaced and PME much closer to each other than to PLE. LE nearly

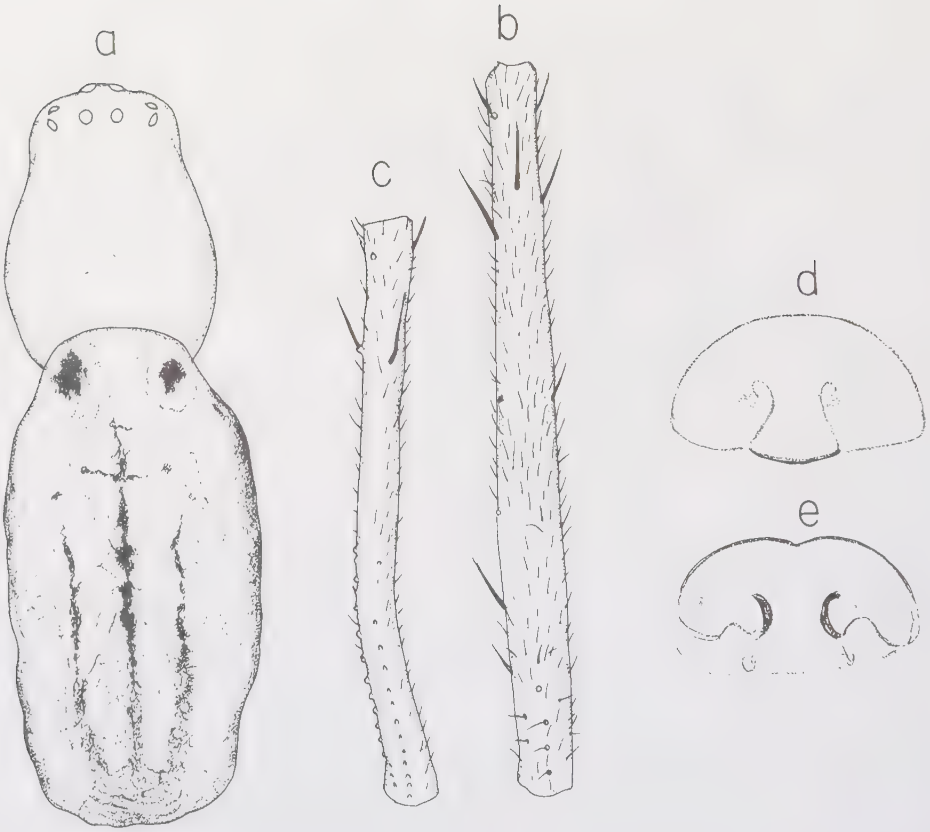


Fig. 337. Female *Leucauge bontoc* n. sp. (a); dorsal view of femur I (b) and femur IV (c); and dorsal (d) and ventral (e) views of epigynum.

contiguous. MOQ square. Clypeus height ca. 0.30 AME diameter. Sternum dark brown, longer than wide, apical one third with black long hairs in at least two transverse rows. Labium pale yellow in the swollen apical one half and brown in basal one half, wider than long. Maxillae longer than wide, diverging apically. Chelicerae reddish brown, small, and stout, promargin with three teeth and retromargin with five teeth. Legs moderately long, yellowish brown except yellowish gray femora. Spination in femur I = 0-0-2-1, tibia I = 0-0-3-3, metatarsus I = 0-0-1-1. Metatarsus I/tarsus I = 3.00. Leg formula 1243. Pedipalp yellow, except brown tarsus, ca. 0.67 length of femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.90	0.80	2.65	2.55	0.85	9.75
2	2.50	0.70	2.00	2.10	0.80	8.10
3	1.30	0.40	0.75	1.00	0.60	4.05
4	2.25	0.50	1.50	1.80	0.65	6.70
Pedipalp	0.60	0.20	0.38	–	0.75	1.93

Abdomen oblongate, silvery and pinkish red, with black bands in posterior one third, anterodorsal one half with four prominent tubercles and four small ones in posterior one half. Venter black with three pairs of elongate silvery bands arranged in longitudinal parallel rows sublaterally. Anterior one half of abdomen overhangs cephalothorax. Spinnerets yellowish brown basally, black in terminal segments, similar to colulus, anterior pair almost twice the diameter of posterior pair.

Natural history: D-Vac collected in upland rice at tillering stage in September.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Lipa City, Marauoy Vill., one female, 17 January 1990, A.A. Barrion; *Palawan Is.*, Palawan Prov., Aborlan, Cabigaan Vill., one female, 30 September 1987, A.T. Barrion.

Distribution: Singapore, Indonesia, and the Philippines (new record).

Remarks: Very active in the early morning, building suspended and 45°-angled or inclined webs on rice canopy. The web measures 16.8–35 mm in diameter, one end is connected to leaf tops and the other end to lower leaves or rice stems.

Leucauge bontoc new species
(Fig. 337a–e)

Description:

Female: Total length 6.70 mm. Cephalothorax 2.50 mm long, 1.60 mm wide, 1.10 mm high. Abdomen 4.20 mm long, 2.10 mm wide, 1.75 mm high. Cephalothorax yellowish brown with black eye margins. Cephalic area parallel-sided seen frontally. Eight eyes in two rows, recurved AE row slightly shorter than straight PE row.

Eye diameter (mm): AME = ALE = 0.09, PME = PLE = 0.08. Eye separation (mm): AME–AME = 0.09, AME–ALE = 0.23, PME–PME = 0.13, PME–PLE = 0.18. LE contiguous. MOQ narrower in front than behind, anterior width 0.85 of length (0.33 mm). Clypeus height slightly more than one AME diameter. Sternum yellowish brown, with 16 long dark brown hairs in two transverse rows subapically and short brown hairs in most parts, longer than wide, and inverted Y-shaped beyond coxae IV. Labium and maxillae typical of *Leucauge* in coloration and shape. Labium as wide as long. Chelicerae yellow-brown with dark red fang. Promargin with three teeth and retromargin has four teeth. Legs long and slender, brown except small black band on tips of tibiae and metatarsi. Metatarsus I/tarsus I = 5.30. Spination in femur I = 1-0-5/7-3, tibia I = 2-0-3-3, metatarsus I = 1-0-1-1. Femur IV with about 29 trichobothria in two rows. Leg formula 1243. Pedipalp yellow with brownish tarsus, ca. 0.65 length of femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.05	1.00	3.75	4.10	1.20	14.10
2	3.15	0.95	2.60	3.00	1.05	10.75
3	1.90	0.55	1.10	1.50	0.70	5.75
4	3.30	0.75	2.30	2.70	0.65	9.70
Padipelp	0.90	0.35	0.55	–	0.85	2.65

Abdomen elongate, silvery to pale yellow, dorsally with black spot on moderately swollen shoulder hump, three longitudinal median black stripes merging in the posterotransverse black band, posterodorsal one third uniformly lined with yellowish brown transverse corrugations. Laterals black with silvery longitudinal band, aborted in posterior one third, leaving a globular silvery spot near the spinnerets. Venter uniformly pale yellow with a transverse recurved furrow subposteriorly. Tip of abdomen rounded, slightly beyond spinnerets. Epigynum with a rectangular yellow brown band dorsad of anterior epigynal margin (AEM), orifice at basolaterals of median scape distinctly separated from AEM. Scape slightly longer than wide, basolateral one half concave, and apex slightly procurved. Spermathecae elongate, moderately broad, and converging apically.

Etymology: Named after the type locality.

Natural history: The specimen was collected from irrigated ricefield in the early morning in March.

Material examined: PHILIPPINES: *Luzon Is.*, Mountain Prov., Bontoc, holotype female, 21 March 1979, A.T. Barrion.

Distribution: Philippines.

Leucauge celebesiana (Walckenaer)

(Fig. 338a–g)

Tetragnatha celebesiana Walckenaer, 1841. Hist. Nat. Ins. Apt. 2: 222.

Epeira nigrotrivittata Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 39.

Meta celebesiana Simon, 1885. Annls. Soc. Ent. Belg. 29: 38.

Meta nigrotrivittata Simon, 1885. Annals. Soc. Ent. Belg. 29: 38.

Argyroepeira nigrotrivittata Simon, 1894. Hist. Nat. Araign. 1(3): 730.

Argyroepeira celebesiana Rainbow, 1898. Proc. Linn. Soc. N.S.W. 23(3): 335.

Argyroepeira ventralis Pocock, 1900. Fauna Brit. India Arachn.: 216.

Leucauge celebesiana Pocock, 1904. Fauna and Geography of the Maldive and Laccadive Archipelagoes Arachn. London 2: 800.

Redescription:

Female: Total length 8.16 mm long. Cephalothorax 2.66 mm long, 2.25 mm wide, 1.75 mm high. Abdomen 5.5 mm long, 3.33 mm wide, 3.33 mm high. Cephalothorax brownish yellow with black eye surrounds, cephalic area narrower but higher than thoracic region, fovea in a deep transverse groove with trifid posterior ends and a short solid longitudinal line above the groove, groove with a pair of small circular pits and concealed under the anterior abdominal overhang. Eight eyes in two rows, AE recurved and shorter than straight PE (1.04 : 1.06 mm), diameters equal to each other (0.12 mm). AME separation one eye diameter. AME–ALE separation two eye diameters. PME separation 1.2 times eye diameter. PME–PLE separation 1.83 times eye diameter. Clypeus height equal to one AME diameter. Sternum dark reddish brown, hirsute, longer than wide, strongly concave anteriorly, extended posteriorly in between coxae IV, and bifurcated underneath lorum. Labium dark reddish brown, wider than long, distal end recurved, with four long setae medially, midhalf of labium with a recurved groove. Maxilla dark brown, longer than wide, inner laterals with scopulae, serrula black with only two long brown hairs below it. Chelicera moderately stout, with a small boss, three promarginal and four retromarginal teeth, promarginal teeth larger than retromarginal, fang with a short but robust base. Legs brown, relatively long and slender, femur IV with a double fringe of ca. 19–20 trichobothrial hairs on the proximal one half prolaterally, tibiae I–IV with a transverse black band distally, and tibial spination I = 2-0-3-3, II = 1-0-3-3, III = 1-0-1-0, IV = 2-0-2/3-2, tarsus three-clawed with six to ten teeth in each superior and zero to ten teeth in the inferior claw. Leg formula 1423. Palp yellow, except yellow-brown tibia and tarsus, each with long setae, dorsal seta of patella and tibia longer than length of tibia, tarsus single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.00	1.33	4.75	5.16	1.50	17.74
2	3.92	1.16	3.42	3.83	1.25	13.58
3	2.16	0.66	1.50	1.83	0.83	6.98
4	3.92	0.92	2.83	3.16	1.00	11.83
Pedipalp	0.95	0.35	0.70	–	1.00	3.00

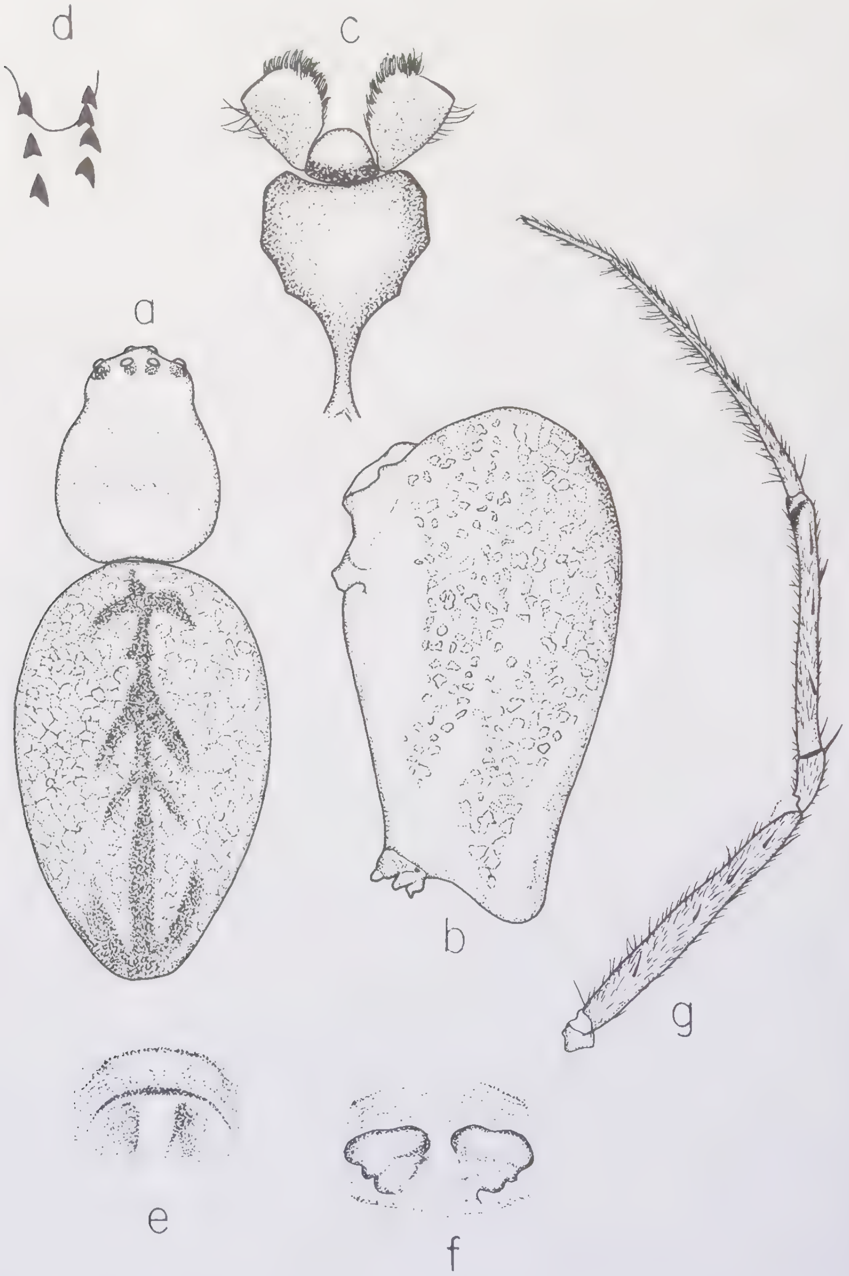


Fig. 338. Female *Leucauge celebesiana* (Walckenaer) (a); side view of abdomen (b); sternum, labium, and maxillae (c); cheliceral teeth (d); dorsal (e) and ventral (f) views of epigynum; and lateral view of leg I (g).

Abdomen silvery white, moderately elongated, overhangs the carapace but without a median depression anteriorly, dorsally with a leaf-like black band made of three longitudinal lines and two pairs of short diagonal lines inside, laterally with a trifurcated silvery white band on a yellowish brown background, and ventrally with a pair of ventrolateral silvery white longitudinal bands. Spinnerets nearly subequal in size and shape, all with blackish distal ends. Epigynum with a transverse C-shaped orifice, longer than wide scape with truncated end, posterior epigynal margin straight, anterior bulge distinct, and lateral margins nearly parallel-sided.

Variation: The total length ranged from 6.70 to 18.20 mm. Posterior end of abdomen with or without a pair of globular black spots above anal tubercle. Tibial spination in leg II ranges from 1-0-3-3 to 2-0-3-3.

Natural history: All specimens were netted from their webs on the rice foliage in the early morning between 0630 and 0730 hours in February. They were also collected in September but were more abundant towards summer months. Their webs were relatively strong and could catch a large satyrid butterfly, *Melanitis leda ismene* Cramer.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental, Claveria, Hinaplanan Vill., three females, 9 December 1985, A.T. Barrion; *Luzon Is.*,

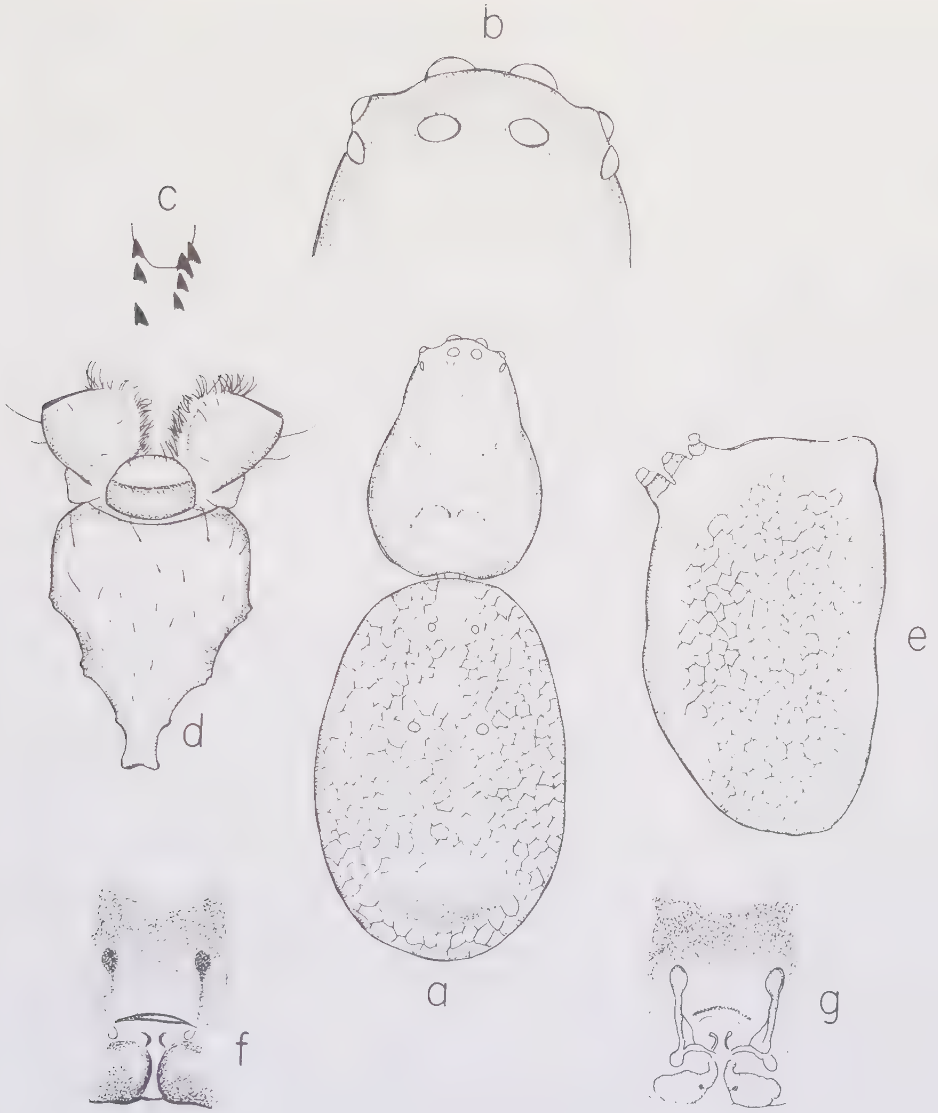


Fig. 339. Female *Leucauge iraray* n. sp. (a); eye pattern (b); cheliceral teeth (c); sternum, labium, and maxillae (d); lateral view of abdomen (e); and dorsal (f) and ventral (g) views of epigynum.

Batangas Prov., Lipa City, Marauoy Vill., two females, 18 September 1987, A.T. Barrion.
Distribution: India, Burma, Sri Lanka, China and the Philippines (new record).

Leucauge iraray new species
(Fig. 339a–g)

Description:
Female: Total length 5 mm long. Carapace 1.80 mm long, 1.32 mm wide, 0.84 mm high. Abdomen 3.20 mm long, 2.32 mm wide, 2 mm high. Cephalothorax yellow-brown with black eye surrounds, generally shaped as in other *Leucauge* except for distinct M-shaped fovea. Eight eyes in two rows, AE strongly recurved but shorter than the straight PE (0.72 : 0.74 mm), all eyes of same diameter (0.10 mm). AME separation one eye diameter. AME–ALE separation 1.2 times eye diameter. AE and PLE all on a slight tubercle. PME separation less than one eye diameter. PME–PLE separation 1.4 times eye diameter. Median ocular quadrangle much wider behind than in front (0.32 : 0.20 mm). Clypeus height a little over one half eye diameter. Sternum brown and bordered, prominently longer than wide, anterior end concave medially, lateral margins with a slightly bifurcated extension opposite bases of coxae II and III, and posterior end broadly extended between coxae IV. Apical area of sternum with two transverse rows of ca. 16 long and erect brown hairs. Labium well separated from sternum by a thin membrane, wider than long, lower half transversely grooved and yellowish apical half elevated, with four long, brown, and erect hairs distally. Maxilla brown, widest anteriorly, and narrowed basally, scopula yellowish lining the inner margin and inner distal half, serrula black. Chelicera yellowish

brown, moderately robust, with a raised dorsobasal portion, small boss, promargin and retromargin with three and four teeth, respectively. Middle tooth of promargin moderately smaller than basal tooth, apical and middle teeth closer to each other. Legs yellowish brown, with gray bands at the distal ends of tibiae I and II, femur I with only three prolateral spines. Femur I bears five trichobothria at dorsobasal one fifth, set in two rows, II has five or six dorsal, set as in I, III two to four prolateral in one row, and IV 14 prolateral in basal one half in two rows, tibial spination I = 0-0-0-1/2, II = 2-0-0-1, III = 1-0-0-0, and IV = 1-0-0-0. Tarsus three-clawed with six or seven and two teeth in superior and inferior claws, respectively. Leg formula 1243. Palp yellow, except brownish tarsus, with five basal hairs arranged spirally, single-clawed with seven teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.44	0.72	2.20	2.56	0.84	8.76
2	1.92	0.64	1.52	1.76	0.68	6.52
3	1.08	0.40	0.72	0.88	0.44	3.52
4	1.72	0.44	1.16	1.48	0.52	5.32
Pedipalp	0.58	0.20	0.34	–	0.70	1.82

Abdomen ovoid, silvery white dorsally and laterally, without black lines or spots, anterior tubercles absent, posterior hump projected proximally, apical half of abdomen with two pairs of spherical sigilla, posterior end between hump and spinnerets yellow and recurved (as viewed laterally), venter yellow with green tinge and a few scattered silvery white marks. Spinnerets and anal tubercle brown, with yellow segment basally. Epigynum with a high yellow band, dark brown and strongly recurved anterior margin, scape rather broad at tip and waisted near basal, spermathecae kidney-shaped.

Etymology: Named after the rice variety Iraray.

Natural history: A single female was collected through an aspirator from upland rice (variety Iraray) in September. This species lived below the plant canopy creeping in between tillers.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Aborlan, Mt. Cabigaan, holotype female, 28 September 1987, A.T. Barrion.

Distribution: Philippines.

FAMILY ARANEIDAE DAHL

(Typical Orb-weavers)

To capture prey, these spiders construct highly specialized vertical orb webs, consisting of many concentric rings and series of radii which characteristically hang down from the center of the web.

In constructing such a snare, the spider first ties together the objects between which the web is to be spun. Often, this entails using air currents to carry the thread. The spider tests the line emitted into the wind to determine when it has struck. The bridgeline is then pulled and fastened, and serves as a foundation thread. This remains in use for a long time, although in some species the rest of the snare may be renewed every few days.

Orb-weavers have eight homogeneous eyes, arranged in two rows; clypeus lower than height of MOQ or at least not higher; chelicerae vertical, with a boss (something rudimentary), lateral condyle, and scopulae; labium free and strongly rebordered; endites more or less parallel and provided with scopulae; palp of female with claw; legs somewhat curved, usually with spines, superior tarsal claws usually similar and pectinate in a single row, and spurious claws also present; trichobothria not present on femora and tarsi but present on metatarsi and two rows on tibiae; abdomen much enlarged and swollen, sometimes irregularly shaped, with its anterior end overlapping carapace.

Family Araneidae is a big family comprising at least four subfamilies – Gasteracanthinae, Araneinae, Argiopinae, and Nephilinae – and about 20 genera in the Oriental region.

KEY TO THE GENERA AND SPECIES OF ARANEID SPIDERS

1 Abdomen hard, flat, and bears lateral spines and dorsal sigillae; spinnerets elevated and enclosed by a thick flange. 2

– Abdomen and spinnerets not as above. 6

2 Posterolateral spines prominently long and black with a moderately enlarged apical one third; abdomen with about 24 sigilla (Fig. 340a). .... *Gasteracantha janopol* n. sp. (Fig. 340a–i)

– Posterolateral spines not prominently long. 3

3 Both lateral spines weakly developed, posterior spines on a swollen tubercle; dorsum of abdomen chalk-white, semioctagonal with a pair of parallel and longitudinally ovoid brown sigilla and a transverse pair anterior to a W-shaped median mark (Fig. 341a). .... *Gasteracantha mammosa* C.L. Koch (Fig. 341a–e)

– Posterolateral spines more robust and stronger than the anterolateral spines. 4

4 Posterior spines poorly developed; abdominal dorsum with 30 sigilla in five transverse rows of 11-2-2-9-6 (Fig. 342a); chelicera with six teeth each in the promargin and retromargin (Fig. 342c). .... *Gasteracantha parangdiadesmia* n. sp. (Fig. 342a–e)

– Posterior spines developed. 5

5 Abdominal dorsum with three yellow transverse bands separating 24 sigilla arranged in three transverse rows of 12-6-4 pattern (Figs. 343a, 344a); chelicera with five or six promarginal and four retromarginal teeth (Fig. 343c), basal tooth of retromargin sometimes bifurcate (Fig. 344c). ....

.... *Gasteracantha diadesmia* Thorell (Figs 343a–f, 344a–i)

– Abdominal dorsum with a broad yellow median band marked with 13–14 sigilla, marginal spines or tubercles separated from each other by a yellow spot (Fig. 345a), chelicera with eight promarginal and six retromarginal teeth (Fig. 345c). .... *Gasteracantha kuhlii* C.L. Koch (Fig. 345a–f)

6 Carapace bears an elevated and convex cephalic region with or without paired tubercles; abdomen often noticeably elongate; tarsus IV without sustenaculum; tibia of male pedipalp not saucer-like; paracymbium flat. 7

– Carapace flat and bears no pair of median tubercles; abdomen variable in shape; tarsus IV with sustenaculum; tibia of pedipalp and paracymbium not as above. 10

7 Midcarapace with a pair of tubercles; AbL : AbW more than 2.4. 8

– Midcarapace without paired tubercles; AbL : AbW less than 2. 9

8 Abdomen with a pair of midlongitudinal yellow lines (Fig. 346a), venter with many yellow spots; AbL : AbW = 2.73; AbL : TL (total length) = 0.71; sternum simple (Fig. 346b); leg formula 1423; epigynum with a transverse concave groove (Fig. 346c); male abdomen 3.50 times longer than wide (Fig. 347a), embolus very long and sperm duct inverted U-shaped (Fig. 347ef). .... *Nephila maculata* (Fabricius) (Figs 346a–c, 347a–e)

– Abdomen with six pairs of subovate yellow spots (Fig. 348a), venter without yellow spots; AbL : AbW = 2.47; AbL : TL = 0.60; sternum with a prominent midsubapical tubercle (Fig. 348bc); leg formula 1243; epigynum with three small pits posteroventrally (Fig. 348gh), ovoid spermathecae with a double-coiled insemination duct in between (Fig. 348h); male not seen. .... *Nephila antipodiana* (Walckenaer) (Fig. 348a–h)

9 Abdomen yellow with three pairs of brown spots (Fig. 349a); AbL : AbW = 1.70; AbL : TL = 0.59; clypeus height small, 0.25 AME diameter; promargin with four teeth (Fig. 349f); epigynum with a mouth-like orifice posterior of globular spermathecae (Fig. 349gij). .... *Nephilengys kenmorei* n. sp. (Fig. 349a–j)

– Abdomen grayish brown with seven diagonal yellow stripes laterally (Fig. 350a); AbL : AbW = 1.65; AbL : TL = 0.64; clypeus height large, 1.4 times AME diameter; promargin with three teeth; epigynum with a distinct AEM, wide orifices separated by an anteriorly narrow plate with a wide and truncate posterior epigynal margin (Fig. 350bc). .... *Nephilengys malabarensis* (Walckenaer) (Fig. 350a–c)

10 Posterior eye row strongly procurved; ALE smaller than PLE. 11

– Posterior eye row almost straight or slightly recurved; LE subequal and near each other. 18

11 Posterior eyes equally spaced or medians closer to laterals than to each other. 12

– PME closer to each other than to the laterals. .. 13

12 Epigynum with a long longitudinal septum dividing the wide depression into two equal halves (Fig. 351i). .... *Gea subarmata* Thorell (Fig. 351a–j)

– Epigynum without distinct septum, posterior epigynal margin strongly concave and lip-like, anterior margin with a pair of black spots (Fig. 352ef). .... *Gea zaragosa* n. sp. (Fig. 352a–f)

13 Female *Argiope*. 14

– Male *Argiope*. 16

14 Abdomen silvery white and yellow, evenly elongate to broadest posteriorly, with a longitudinal median white band interrupting black and silvery white transverse thin bands (Fig. 353a); sternum bears a white median longitudinal band (Fig. 353b); epigynum with a thick V-shaped rim and septum (Fig. 353d). .... *Argiope catenulata* (Doleschall) (Fig. 353a–e)

– Abdominal and sternal markings different; epigynum not as above. 15

15 Abdomen with three transverse and equally wide white bands, broadest in posterior one third, and posterior rounded end reddish (Fig. 355a); septum and rim of epigynum Y-shaped (Fig. 355e). .... *Argiope luzona* (Walckenaer) (Fig. 355a–g)

– Abdomen with three transverse white bands in decreasing diameter towards midlength (Fig. 356a), broadest at midlength, and posterior one half evenly rounded, with alternating thin black and yellow stripes; septum and rim of epigynum widely V-shaped with a broad anterior bulge (Fig. 356cd). .... *Argiope aemula* (Walckenaer) (Fig. 356a–d)

16 Dorsum of abdomen bears transverse whitish yellow bands provided with thin black edges, laterals with thin black longitudinal stripes (Fig. 354a); median apophysis three-pronged median process large and tooth-like, complex conductor fan-like with a sclerotized apically truncate upper branch (Fig. 354bc). .... *Argiope catenulata* (Doleschall) (Fig. 354a–c)

– Abdominal pattern without transverse bands; median apophysis different. 17

17 Femur I with three strong prolateral spines (Fig. 386c); abdomen with eight pairs of sigilla; median apophysis large and pointed apically with a subperpendicular long spur supporting conductor (Fig. 358de). ... *Argiope sapoa* n. sp. (Fig. 358a–e)

– Femur I with weak spines; abdomen with indistinct sigilla (Fig. 357a); median apophysis with three blunt processes; embolus bears a seam, apex sharply pointed and with a short blunt pendant (Fig. 357de). .... *Argiope aemula* (Walckenaer) (Fig. 357a–f)

18 Lateral eyes widely separated; median ocular quadrangle borne on the projected cephalic region (Fig. 359ab); abdomen with rounded humps and irregularly shaped anterior and lateral margins (Fig. 359de); spermathecae in a subtriangular process (Fig. 359h). .... *Poltys illepidus* C.L. Koch (Figs 359a–h, 360a–f)

– LE close to each other; MOQ not on the projected cephalic region. 19

19 Abdomen transversely ovoid, wider than long, leathery, strongly convex dorsally, yellow with 16 black sigilla (Fig. 361ad); epigynum with spherical spermathecae touching each other (Fig. 361e). .... *Cyrtarachne tuladepilachna* n. sp. (Fig. 361a–e)

– Abdomen longer than wide. 20

20 Shoulder humps moderately pointed, connected by a white transverse band (Fig. 362a); chelicera with four promarginal teeth (Fig. 362b); sternum bifurcate posteriorly; epigynum with a swollen base and beak-like scape (Fig. 362d). .... *Parawixia dehaani* (Doleschall) (Fig. 362a–e)

– Not as above. 21

21 Uniformly brown, cephalic higher than the thoracic area and both eye rows recurved; abdomen with four pairs of moderately small spherical sigilla in two longitudinal rows (Fig. 363a). .... *Acusilas dahoneus* n. sp. (Fig. 363a–e)

– Entirely not as above. 22

22 Carapace flat; fovea distinct; abdomen very high anteriorly and bears at least a pair of shoulder humps. 23

– Carapace not flat; fovea may or may not be visible; abdomen with different shape. 26

23 Abdomen dull brown to yellowish brown. 24

– Abdomen brownish red or greenish yellow. 25

24 Abdomen dull brown and smooth anteromarginally, deeply cleft at posterior tip (Fig. 364a); epigynum with a pair of ovoid to globular spermathecae (Fig. 364g). ...... *Cyrtophora exanthematica* (Doleschall) (Fig. 364a–g)

– Abdomen yellow brown, rough anteriorly and slightly cleft posteriorly (Fig. 365a); epigynum with ovoid and anteriorly diverging spermathecae (Fig. 365f). ..... *Cyrtophora parangexanthematica* n. sp. (Fig. 365a–g)

25 Carapace with minute peg-like spines; abdomen brownish red and slightly longer than wide (Fig. 366a); epigynum with a pair of ovoid spermathecae (Fig. 366hi). .... *Cyrtophora unicolor* (Doleschall) (Fig. 366a–j)

– Carapace smooth; abdomen with a pair of yellow green humps towards the anterior and distinctly longer than wide (Fig. 367ae); epigynum with a pair of elongate diverging spermathecae (Fig. 367h). .... *Cyrtophora koronadalensis* n. sp. (Fig. 367a–h)

26 Carapace bears a U-shaped junction between cephalic and thoracic area; PME very close to each other. 27

– Carapace without U-shaped junction, PME distinctly far apart. 38

27 Abdomen subglobose with a pair of small subanterodorsal humps. 28

– Abdomen distinctly elongate. 31

28 Femur I shorter than IV; patella + tibia index of leg I = 1.19; carapace index = 1.14; cephalic area more lightly colored than the thoracic area (Fig. 368ab); sternum with a white T-band (Fig. 368c); epigynum bears a large and midanteriorly indented scape (Fig. 368ef). .... *Cyclosa ipilea* n. sp. (Fig. 368a–g)

– Femur I longer than IV. 29

29 Abdomen without the anterodorsal humps, bears five dark yellowish brown dorsomedian spots (Fig. 369a); carapace index = 1.34; clypeus index = 0.40; patella + tibia index of leg I = 1.56; chelicera with four promarginal teeth (Fig. 369b); epigynum with the scape distinctly cleft midanteriorly (Fig. 369gh). .... *Cyclosa banawensis* n. sp. (Fig. 369a–h)

– Characters not as above. 30

30 Spermathecae L-shaped (Fig. 370g). .... *Cyclosa mulmeinensis* (Thorell) (Figs 370a–g, 371a–e)

– Spermathecae elongate and diverging (Fig. 372g–j). .. *Cyclosa parangmulmeinensis* n. sp. (Fig. 372a–j)

31 Male. 32

– Female. 33

32 Apical one half of femora I–IV without a distinct black band; elongate abdomen bears a black cross-like band, three pairs of black spots dorsally, and a large black posterolateral spot (Fig. 373ab); tibia II with few strong prolateral spines (Fig. 373f); cymbium rounded apically and embolus distinctly short (Fig. 373h. ...... *Cyclosa krusa* n. sp. (Fig. 373a–h)

– Apical one half of femora I–IV black to reddish brown (Fig. 374a); abdomen globose to slightly elongate with black and silvery bands and five pairs of brown spots (Fig. 374ab); tibia II with nine prolateral strong spines (Fig. 374d); cymbium narrowed apically and embolus moderately long (Fig. 374f). .... *Cyclosa insulana* (Costa) (Fig. 374a–f)

– Entire femora and II brownish yellow and III–IV yellow; abdomen black with eight white spots (Fig. 376a); tibia II with two strong prolateral spines (Fig. 376c); femur I with three strong midprolateral spines (Fig. 376d); embolus sickle-shaped (Fig. 376ef). .... *Cyclosa otsomarka* n. sp. (Fig. 376a–f)

33 Posterior tubercle of abdomen prominently longer than the subposterolateral tubercles. 34

– Posterior tubercle of abdomen weak or absent. 35

34 Carapace uniformly black, carapace index = 1.38; abdomen with whitish spots in two longitudinal rows (Fig. 377a); subposterolateral humps prominently strong; scape subquadrate (Fig. 377eg). .... *Cyclosa dosbukolea* n. sp. (Fig. 377a–i)

– Carapace brown with black lateral margins (Fig.375a); carapace index = 1.50, abdomen bears a broad longitudinal silvery white band and weak subposterolateral humps (Fig. 375a); scape broad and rounded anteriorly (Fig. 375e). .... *Cyclosa insulana* (Costa) (Fig. 375a–g)

35 Abdomen with three tubercles towards posterior end. 36

– Abdomen with zero to two tubercles posteriorly. 37

36 Carapace index = 1.31, entire carapace brownish yellow; AME > ALE > PME = PLE; abdomen with a pair of transverse ovoid spots dorsomedially (Fig. 378ab), dorsum only slight curved (Fig. 378b) viewed laterally. .... *Cyclosa parangtarugoa* n. sp. (Fig. 378a–f)

– Carapace index = 1.28, entire dorsum pale reddish brown with pale V-shaped band posterior to cephalic region (Fig. 379ab); PME > AME = ALE = PLE; abdomen with two pairs of black spots (Fig. 379ab), saddle-shaped towards posterior in lateral view (Fig. 379bc). .... *Cyclosa saismarka* n. sp. (Fig. 379a–h)

37 Posterior tip of abdomen cleft (Fig. 380a); legs with brown and yellow bands; spermathecae kidney-shaped, parallel to each other (Fig. 380e); scape projected obliquely downwards (Fig. 380f). .... *Cyclosa baakea* n. sp. (Fig. 380a–f)

– Posterior tip of abdomen normal, rounded, and moderately swollen in posterior one fourth (Fig. 381ad), dorsum of apical one third bears three pairs of sigilla; legs mostly black, except yellowish tarsi; spermathecae diverging apically and converging posteriorly (Fig. 381ef); scape projected laterally after the midcurve (Fig. 381g). .... *Cyclosa bifida* (Doleschall) (Fig. 381a–g)

38 AME the largest (Fig. 382a); MOQ wider in front than behind; abdomen yellowish brown, oblongate, with four pairs of brown sigilla medially (Fig. 382a); epigynum with a transversely wide U-shaped plate bearing a large scape (Fig. 382f). .... *Singa hilira* n. sp. (Fig. 382a–g)

– PME the largest; MOQ narrower in front than behind; abdomen with a circular white ring, enclosing an inverted V-band anteriorly, a pair of spots subposteriorly, and a white longitudinal band (Fig. 383a); epigynum short, T-shaped, with an apically truncate scape (Fig. 383c). .... *Hyposinga pygmaea* (Sundevall) (Fig. 383a–c)

– Character combination entirely not as above. ... 39

39 Elongate, slender araneid spiders with rounded to slightly tapered posterior and anterior ends; cephalothorax longer than wide with a vertical median fovea; MOQ almost twice as wide in front as behind. . 40

– Abdomen usually ovoid; MOQ slightly longer than wide. 43

40 Female *Larinia*. 41

– Male *Larinia*. 42

41 Scape relatively short, tongue-like or linguiform, lateral epigynal margin semicircular and posterior epigynal margin widely cleft (Fig. 384cd). .... *Larinia fusiformis* (Thorell) (Fig. 384a–e)

– Scape moderately long, lateral epigynal margin slightly pointed or wide midlaterally, posterior epigynal margin not cleft (Fig. 386c–e). .... *Larinia phthisica* (L. Koch) (Fig. 386a–e)

42 Abdominal dorsum without markings (Fig. 387a); metatarsus I/tarsus I = 3.81. .... *Larinia phthisica* (L. Koch) (Fig. 387a–l)

– Abdomen with four pairs of small black spots, middle pairs close to the laterals and wide apart (Fig. 385a); median apophysis directed prolaterally (Fig. 385b); stipes apophysis keel-shaped (Fig. 385b); metatarsus I/tarsus I = 3.70. .... *Larinia fusiformis* (Thorell) (Fig. 385ab)

– Abdomen with a pair of brown spots in apical one third and a brown spot at the slightly tapered anterior end (Fig. 388a); median apophysis broadly bifid and base of terminal apophysis with wart-like projections of ejaculatory duct (Fig. 388df); metatarsus I/tarsus I 3.29. .... *Larinia parangmata* n. sp. (Fig. 388a–f)

43 Abdomen ovoid without tail or tubercle posteriorly; thoracic groove transverse or longitudinal; patella of male pedipalp with one or two spines. 44

– Abdomen subtriangular with a posterior tubercle or tail. 61

44 Cephalothorax with a longitudinal fovea; patella of male's pedipalp usually with two spines; scape of female epigynum relatively short, often linguiform. 45

– Cephalothorax bears a transverse fovea; patella of male's pedipalp with one spine; scape of female epigynum long and slender. 54

45 Male *Neoscona*. 46

– Female *Neoscona*. 50

46 Abdomen with a black circular ring along margins and a network of gray markings dorsally becoming dark and prominent posteriorly (Fig. 389a); tibia II with two or three prolateral and two ventral spines in left leg, prolateral spines absent in right leg in some specimens (Fig. 389c). .... *Neoscona dostinikea* n. sp. (Fig. 389a–g)

– Abdomen not as above; tibia II with 17–65 prolateroventral spines. 47

47 Tibia II with 51–65 prolateral spines. 48

– Tibia II with 17–29 prolateral spines. 49

48 Cephalothorax brown to reddish brown, longer than ovate abdomen, densely covered by yellow brown spines (Fig. 390a); MOQ 1.4 times wider in front than behind; clypeus height as large as one AME diameter; chelicera with four promarginal and three retromarginal teeth (Fig. 390d); tibia II with 51–65 prolateroventral spines (Fig. 390g). .... *Neoscona yptinika* n. sp. (Fig. 390a–l)

– Cephalothorax yellowish brown, shorter than ovoid abdomen, with tree-like folium dorsally (Fig. 391a); MOQ 1.66 times wider in front than behind; clypeus height one fifth AME diameter; chelicera with five promarginal and two retromarginal teeth. .... *Neoscona usbonga* n. sp. (Fig. 391a–j)

49 Cephalothorax with two broad reddish brown dorsolateral bands (Fig. 393a); tibia II with 29 prolateroventral spines. .... *Neoscona oriemindoroana* n. sp. (Fig. 393a–f)

– Cephalothorax with three brown bands (Fig. 394a); tibia II with 29 prolateroventral spines (Fig. 394c). .... *Neoscona theisi* (Walckenaer) (Fig. 394a–e)

50 Abdomen with a longitudinal white median dagger-like band in between two brownish bands (Fig. 395a); tibia I with four pairs of ventral spines; sternum yellow with a white median band (Fig. 395b); scape slightly constricted at midhalf (Fig. 395d). ... . *Neoscona theisi* (Walckenaer) (Fig. 395a–d)

– Entirely not above. 51

51 Abdomen ovoid with a white W-shaped band dorsally, brown band in between and laterally (Fig. 396a); legs yellow with longitudinal black to gray stripes prominent ventrally; scape short and linguiform with a large roundish base (Fig. 396e). . *Neoscona molemensis* Tikader and Bal (Fig. 396a–e)

– Abdomen without a W-band and legs with no longitudinal bands. 52

52 Total length 10.53 mm; CL/AbL = 0.44 mm; AME = PME > PLE = ALE (Fig. 397a) sternum yellow with a white median band (Fig. 397b); clypeus height 0.50 AME diameter; tibia I with seven ventral spines; scape shortly linguiform (Fig. 397gh). .... *Neoscona nautica* (L. Koch) (Fig. 397a–h)

– Total length 12.8–19.50 mm; CL/AbL more than 0.48 AME diameter; AME > PME; clypeus height 0.60–1.15 AME diameter; tibia I with 12–15 ventral spines. 53

53 Total length 19.50 mm; CL/AbL = 0.56 mm; abdominal dorsum with a distinct inverted tree-like folium (Figs. 398a, 399a); tibia I with 14–15 ventral spines; scape parallel to the body in side view (Figs. 398de, 399d–f) and moderately concave at midlength (Fig. 398d). .... *Neoscona rumpfi* (Thorell) (Figs 398a–e, 399a–f)

– Total length 12.80 mm, CL/AbL = 0.48 mm; abdominal dorsum without a distinct tree-like folium (Fig. 392a); tibia I with 12 ventral spines; scape wide medially (Fig. 392fg). .... *Neoscona usbonga* n. sp. (Fig. 392a–g)

54 Male *Araneus*. 55

– Female *Araneus*. 57

55 Carapace with a black longitudinal band and abdomen with serrated dagger-like folium (Fig. 400a); patella of pedipalp with two long spines (Fig. 400b). . *Araneus inustus* (C.L. Koch) (Fig. 400a–d)

– Not as above. 56

56 Total length 4.80 mm; cephalothorax with V-band at base of cephalic area, and abdomen yellow with pale brown median spots (Fig. 402a); tibia II with six ventral and seven prolateral spines. .... *Araneus tinikdikitus* n. sp. (Fig. 402a–g)

– Total length 3.10 mm; cephalothorax brownish yellow with a dark brown cephalic area, and whitish yellow abdomen (Fig. 403a); tibia II with four ventral and two prolateral spines. .... *Araneus dospinolongus* n. sp. (Fig. 403a–f)

57 Cephalothorax with a long median longitudinal band and abdominal dorsum with dagger-like folium (Fig. 401a); scape short to wide V-shaped (Fig. 401c). ... . *Araneus inustus* (C.L. Koch) (Fig. 401a–c)

– Cephalothorax and scape different. 58

58 Abdomen wider than long, chalk-white, and subtriangular (Fig. 404a); scape with lateral flange towards apex (Fig. 404ef). .... *Araneus tatsulokeus* n. sp. (Fig. 404a–f)

– Abdomen longer than wide; scape not as above. 59

59 Abdomen globose white with yellow anterior band, black transverse submedian band, and four black humps posteriorly (Fig. 405a); chelicera with three teeth each in promargin and retromargin (Fig. 405c); scape with orifice on each side (Fig. 405f). .... *Araneus mitificus* (Simon) (Fig. 405a–h)

– Not as above. 60

60 Abdomen elliptical, white with three black spots anteriorly and three pairs of spots in posterior one third (Fig. 406a); epigynum with a short scape (Fig. 406d). .... *Araneus ellipticus* (Tikader and Bal) (Fig. 406a–d)

– Abdomen ovoid, yellow with three or four pairs of brown spherical spots (Fig. 407a); scape absent, midlateral process in lateral epigynal margin developed (Fig. 407d). .... *Araneus santacruziensis* n. sp. (Fig. 407a–e)

61 Abdomen with a distinct posterior tubercle or tail (Fig. 408af). .... *Eriovixia laglaizei* (Simon) (Fig. 408a–j)

– Abdomen with a small posterior tubercle. 62

62 Female; clypeus normal, tip of abdomen with a black spot (Fig. 409a); scape rounded apically with a pair of black structures towards base (Fig. 409e). .... *Eriovixia excelsa* (Simon) (Fig. 409a–f)

– Male; clypeus modified to a snout-like process; tip of abdomen with a small chalk-white to cream tubercle. 63

63 Cephalothorax uniformly yellow-brown, except darker and narrowed cephalic area, fovea T-shaped (Fig. 410a); MOQ 1.25 times wider in front; tibia I with one ventral spine and five in II. .... *Tukaraneus palawanensis* n. sp. (Fig. 410a–f)

– Entirely not as above. 64

64 Cephalothorax yellow with a broad V-band (Fig. 411a); MOQ almost a square; tibiae I and II each with six ventral spines; tibia III as long metatarsus III; metatarsus I/tarsus I = 2.85. .... *Tukaraneus mahabaeus* n. sp. (Fig. 411a–f)

– Cephalothorax yellowish brown with a gray-brown Y-band (Fig. 412a); MOQ slightly wider in front than behind; tibia I with three ventral spines and five in II; tibia III longer than metatarsus III; metatarsus I/tarsus I = 2.38. .... *Tukaraneus patulisus* n. sp. (Fig. 412a–f)

Genus *Gasteracantha* Sundevall

Gasteracantha Sundevall, 1833. Conspectus Arachnidum: 14.

Members of the genus are beautiful spiders, ornamented with spines and sigilla. The cephalic area of the cephalothorax much elevated in the middle and sloping anteriorly and posteriorly. Median ocular quadrangle wider behind than in front, ME usually subequal in size. Abdomen subquadrate, large to transversely oblong, laterally narrowed and horny, impressed dorsally with prominent sigilla, large marginal spines present anteriorly, medially, and posteriorly. Median spines often the longest. Spinnerets forming a circular space ringed by a thick flange.

Gasteracantha is most common in the tropics, comprising 129 species distributed in Australian (49 species), Oriental and Ethiopian (36 each), and Neotropical eight regions.

Gasteracantha janopol new species
(Fig. 340a–i)

Description:
Female: Total length 11.38 mm. Cephalothorax 3.88 mm long, 3.77 mm wide, 3.05 mm high. Abdomen 7.50 mm long, 8.91 mm wide, 5 mm high. Cephalothorax deep brown to reddish brown, cephalic region rectangularly elevated and narrower than the deep but wider thorax, with an M-shaped yellow marking below fovea, thorax concealed underneath the anterior portion of abdomen. Carapace clothed with white hairs. Eight eyes in two recurved rows; eye length (mm): AE = 3.33 and PE = 3.38. Eye diameter (mm): AME = PME = 0.20 and ALE = PLE = 0.14. Eye separation: AME 0.6 eye diameter, AME–ALE 6.2 times AME diameter, LE one half AME diameter, PME a little over one eye diameter, PME–PLE subequal to AME–ALE. Median ocular quadrangle narrower in front than behind (0.12 : 0.21 mm) and widest part equal to length. Clypeus height less than one AME diameter. Sternum triangularly pointed basally, procurved apically and with transverse white spots between coxae I, white spots opposite coxae II–IV. Labium deep red-brown, wider than long, and rounded at apex, with a yellow border. Maxillae concolorous with labium, as long as wide, with reduced base, inner scopulae yellow-brown and inner half of maxillae yellow. Chelicerae reddish brown, short but robust, with five retromarginal and seven promarginal teeth of equal sizes. Legs deep brown, uniformly setaceous, robust spines absent, tarsal venter with peg-like spines, three-clawed with eight teeth. Leg formula 1423. Pedipalp dark brown except yellow femur, single-clawed with nine teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.38	1.55	2.88	2.44	1.38	11.63
2	3.22	1.44	2.55	2.16	1.27	10.64
3	2.27	0.88	1.50	1.27	1.00	6.92
4	3.66	1.38	2.55	2.50	1.27	11.36
Pedipalp	1.30	0.62	0.97	–	1.62	4.51

Abdomen concave, yellow with black marginal spines, black to reddish brown, 24 conspicuous sigilla. Anterior spine short, projected upwards, posterior pair relatively longer than anterior and projected posterad.

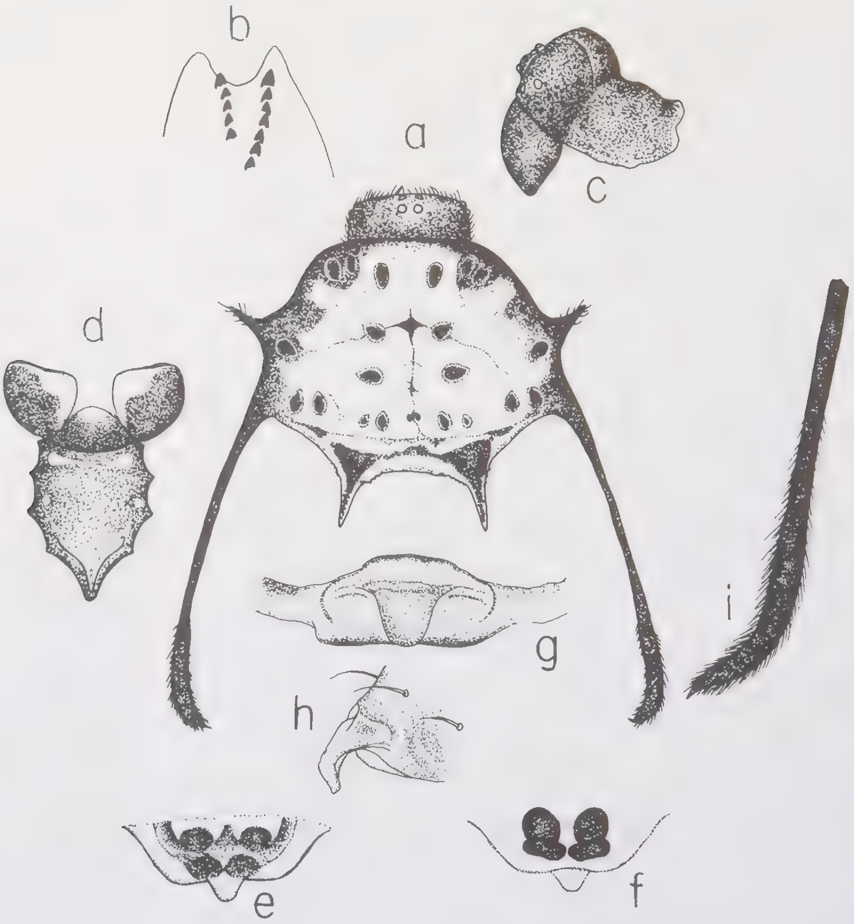


Fig. 340. Female *Gasteracantha janopol* n. sp. (a); cheliceral teeth (b); side view of carapace (c); sternum, labium, and maxillae (d); dorsal (e) and ventral (f) views of cleared and dorsal (g) and lateral (h) views of uncleared epigynum; and portion of long spine (i).

Anterosubdorsal sigilla nearly contiguous. Median spine very long (17.33 mm), slightly less than twice width of abdomen, apical one third curved inwards, hairy, slightly clavate, and pointed at tip. Venter black with yellow patches and clothed with short brown hairs, highest along spinnerets. Spinnerets reduced inside an orifice and directed ventrally. Epigynum provided with a downwardly curved scape borne on a grayish anterior bulge, spermathecae G-shaped, opposite each other.
Etymology: Named after the type locality.
Natural history: The only specimen was collected in April from its web within a stand of *Anona squamosa* L. The web of *G. janopol* showed no stabilimentum; however, it contained 12 small dirty white and ovoid balls scattered spirally in the web. The web-building operation was not observed.
Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Janopol Vill., holotype female, 17 April 1979, A.T. Barrion.
Distribution: Philippines.
Remarks: This new species resembles *G. dalyi* Pocock in the shape of epigynum and *G. remifera* Butler in the shape of median spine, but differs from both species in the position of anterodorsal sigilla.

Gasteracantha mammosa C.L. Koch

(Fig. 341a–e)

Gasteracantha mammosa C.L. Koch, 1845. Die Arachn. 11: 57.
Plectana brevispina Doleschall, 1857. Natuur. Tijdchr. Ned-Indie 13: 423.
Gasteracantha mammeata Thorell, 1859. Oefv. Ceph. Ak. Forh. 16: 302.
Gasteracantha canningensis Stoliczka, 1869. J. Asiat. Soc. Bengal 38: 248.
Gasteracantha mastoidea L. Koch, 1871. Arachn. Austral. 1: 201.
Gasteracantha flavida Hasselt, 1882. Aplev Natur. Hist. 4(11A): 15.
Gasteracantha mediofusca Merian, 1911. Zool. J. (Syst.) 31(2): 237.

Redescription:
Female: Total length 8.92 mm. Cephalothorax 3.50 mm long, 3.00 mm wide, 2.02 mm high. Abdomen 5.42 mm long, 7.33 wide, 2.67 mm high. Cephalothorax yellow brown in the cephalic and blackish brown in the thoracic

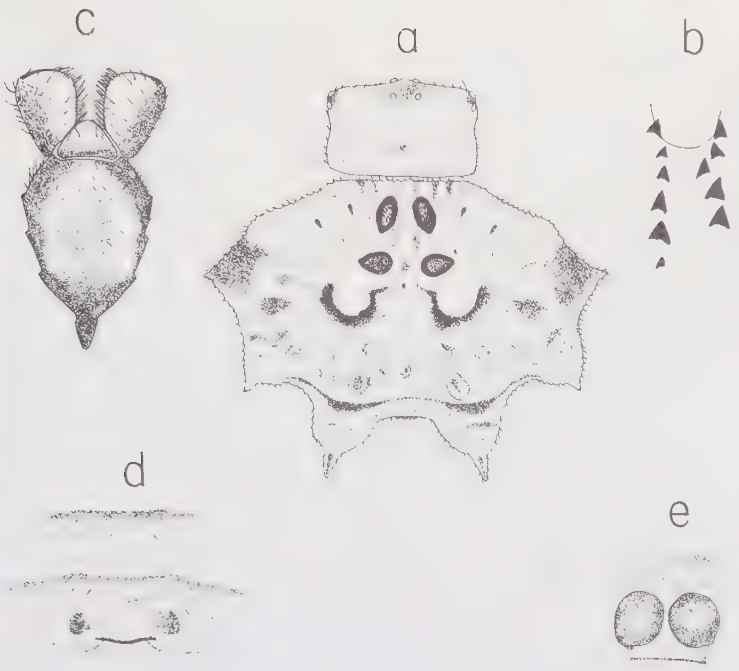


Fig. 341. Female *Gasteracantha mammosa* C.L. Koch (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

region. Cephalic area distinctly higher than thorax, rectangular frontally and dorsally, with a tubercle in the center of the latter's view, blackish brown in the ocular quadrangle and around LE. Eight eyes in two very slightly recurved rows. Eye diameter (mm): AME = ALE = 0.12, PME = 0.16, PLE = 0.10. Eye separations: AME–AME 1.3 times eye diameter, AME–ALE eight times AME diameter, PME–PME 1.4 times PME diameter, PME = PLE ten times PLE diameter. Ocular quadrangle wider than long and wider behind than in front. Clypeus height small as long as one AME diameter. Sternum blackish brown with an inverted V-shaped yellow band apically and a yellow globular spot opposite each of coxae III. Labium wider than long, basal one fourth dark brown and apical three fourths yellow and narrowed apically. Maxillae dark brown, except yellow latero-inner margin, and as long as wide. Chelicerae moderately small, promargin with six teeth and retromargin with five teeth. Legs yellow, except black base and apical one half of femora III and IV, apical four fifths of femora I and II, tibiae I–IV, and apices of all metatarsi and tarsi. Leg formula 4123.

Length of leg and padipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.00	1.13	1.46	1.17	0.79	6.55
2	1.92	1.08	1.25	1.08	0.75	6.08
3	1.33	0.58	0.83	0.58	0.66	3.98
4	2.58	0.92	1.33	1.25	0.75	6.83
Pedipalp	0.92	0.58	0.67	–	0.92	3.09

Abdomen chalk-white, with scattered brownish patches, semioctagonal, wider than long, anterior part strongly overlaps thoracic area. Dorsum with 19 submarginal ovoid sigilla, middle area with three pairs (two large transverse and one small longitudinal) of sigilla in decreasing size towards the posterior, and a pair of large white spots between the first pair of lateral tubercles. Posterior one half of abdomen with two more pairs of tubercles projected vertically. Epigynum transversely ovate with a small tongue-like scape. Spermathecae spherical with a narrow external tube opening.

Natural history: All specimens were collected from their webs made between *Coffea arabica* trees from July to December.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental, Claveria, Hinaplanan Village, one female and one immature, 9 December 1988, A.T. Barrion; Agusan del Sur, Del Monte Vill., one female, 27 July 1981, A.T. Barrion; *Luzon Is.*, Cagayan, Gadu, Gadu Vill., one female, 22 September 1981, A.T. Barrion and B. Canapi.

Distribution: India, Bangladesh, Sri Lanka, Burma, Pakistan, Philippines, Papua New Guinea, Japan, Australia, Fiji and China.

Gasteracantha parangdiadesmia new species

(Fig. 342a–e)

Description:

Female: Total length 9.60 mm. Cephalothorax 3.60 mm long, 3.60 mm wide, 2.50 mm high. Abdomen 6.00 mm long, 20.80 mm wide, including spine, 4.80 mm high. Cephalothorax brown to dark brown, except a pair of black longitudinal parallel stripes in midcephalic area, with an elevated rectangular-like cephalic area clothed

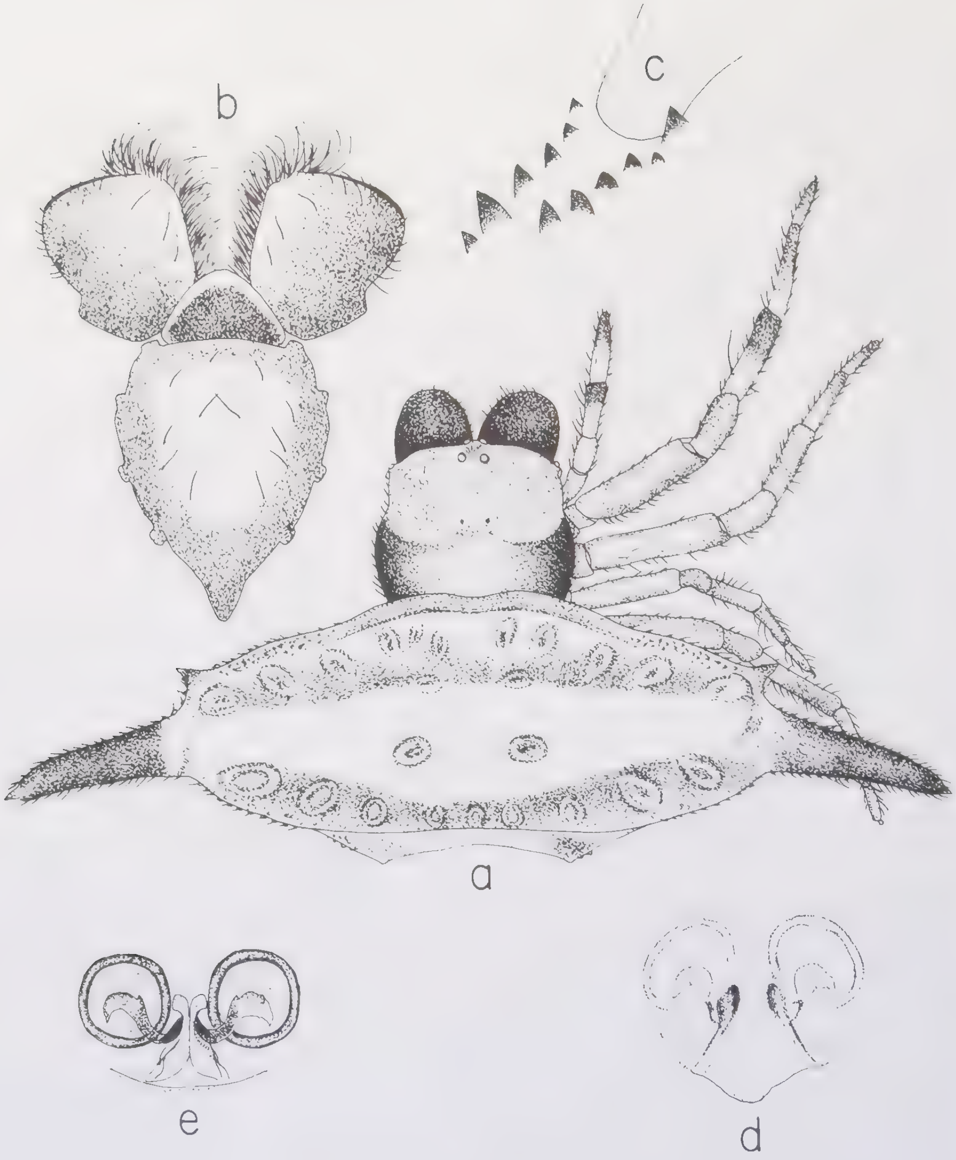


Fig. 342. Female *Gasteracantha parangdiadesmia* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and dorsal (d) and ventral (e) views of epigynum.

with white hairs, and bears a lateral constriction posterior to PLE. Very similar to *G. diadesmia* except eye and leg measurements and abdominal pattern. Eight eyes in two recurved rows. Eye diameter (mm): AME = 0.15, ALE = PME = 0.13, PLE = 0.10. Eye separation (mm): AME–AME = 0.14, AME–ALE = 1.39, ALE–PLE = 0.08, PLE–PME = 1.36, PME–PME = 0.23. MOQ-AW (0.39 mm) narrower than MOQ-PW (0.48 mm), nearly as long as length (0.40 mm). Clypeus height about 0.66 AME diameter. Sternum heart-shaped, whitish yellow with black borders, posterior end tubercle-like between coxae IV. Labium typical of *Gasteracantha*. Maxillae dark reddish brown with yellow inner one fifth. Scopulae thick, yellowish brown. Chelicerae dark reddish brown. Promargin with six teeth, similar to retromargin. Legs dark brown with whitish yellow patches in venter of coxae and subposterior of femora III–IV. Spination in femur I = 2-1-1-0, tibia I = 1-7-1-1. Metatarsus I/tarsus I = 1.83. Leg formula = 4123. Pedipalp as long as femur I plus patella I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	1.25	2.00	1.65	0.90	8.40
2	2.75	1.10	1.55	1.50	1.00	7.90
3	1.90	0.75	1.00	1.05	0.80	5.50
4	2.90	1.00	1.90	2.00	1.10	8.90
Pedipalp	1.15	0.80	0.85	–	1.35	3.85

Abdomen with two yellow transverse bands, a narrow apical and a broad median, entire dorsum bears five rows of transversely arranged sigilla with a pattern of 11-2-2-9-6. All sigilla in a brown band except the large transverse median pair. Anterior margin cleft at

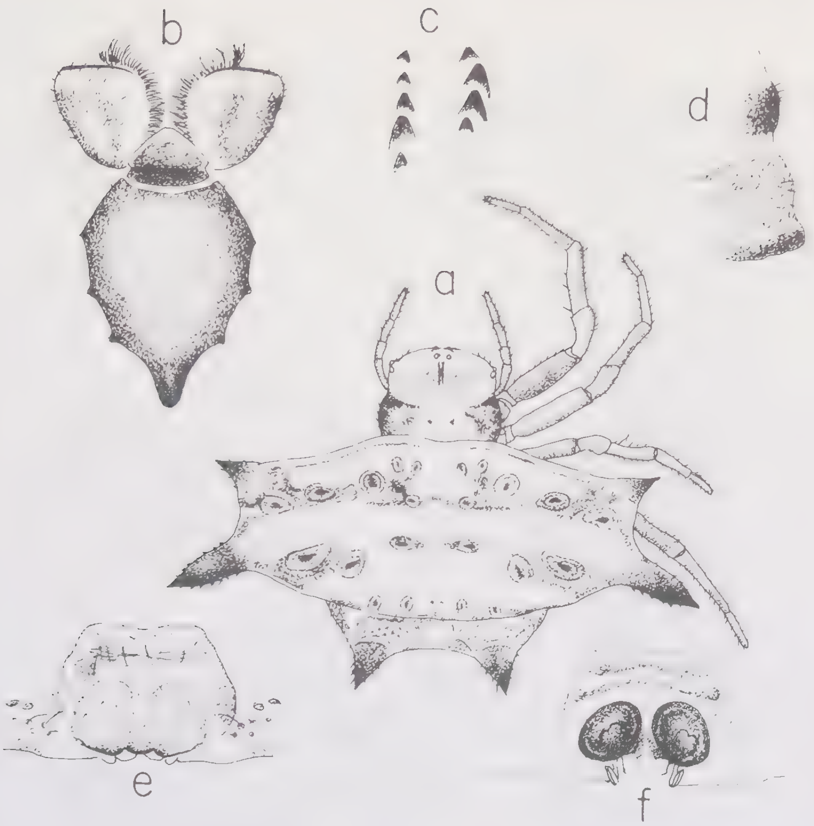


Fig. 343. Female *Gasteracantha diadesmia* Thorell form I (a); sternum, labium, and maxillae (b); cheliceral teeth (c); side (d), dorsal (e), and ventral (f) views of epigynum.

midlength. Laterals with a small apical spine and a large horn-like posterolaterally projected spine with two small tooth-like spines at apex. Posterior pair of spines poorly developed, nipple-like. Venter highest along epigynum and spinneret area, apical one half with 21 brown spots, midlength has 12 yellow spots in two transverse rows of four and eight with four around epigynum. Posterior one half with eight yellow spots, in two transverse rows of two and six, and six large ovoid sigilla. Epigynum with a black nipple-like protuberance on single space, spermathecae globular with an inverted Y-shaped structure of ducts in between.

Etymology: Named after its close similarity to *G. diadesmia*.

Natural history: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 16 March 1985, M. Perez.

Material examined: The single specimen was collected from a kerosene light trap in March.

Distribution: Philippines.

Gasteracantha diadesmia Thorell
(Figs 343a–f, 344a–i)

Gasteracantha diadesmia Thorell, 1887. Ann. Mus. Civ. Genova 25: 225.

Redescription:

Female: Total length 10.61 mm long. Cephalothorax 3.11 mm long, 3.5 mm wide, 2.83 mm high. Abdomen 7.5 mm long, 12.16 mm wide, 6.33 mm high. Cephalothorax blackish brown clothed with white hairs, cephalic area elevated and nearly one half length of carapace, thorax low, concealed by anterior part of abdomen, brown-yellow in a bell-shaped median area with a pair of brown pits on the apical one third. Eight eyes in two recurved rows, AE nearly as long as PE (3 : 3.05 mm). Eye diameter in (mm) decreasing length: AME = 0.16, PME = 0.12, ALE = PLE = 0.10. AME separation nearly one eye diameter. AME–ALE separation 7.5 times AME diameter. PME separation 1.83 times eye diameter. PME–PLE separation equal to AME–ALE. Eyes on tubercles with LE on a more prominent tubercle. Median ocular quadrangle wider than long, wider behind than in front. Clypeus height subequal to ALE. Longitudinal black parallel band prominent behind PME. Sternum heart-shaped pointed behind and concave apically below labium, blackish brown, except yellow median on the apical one third, bordered by long hairs. Labium much wider than long (0.80 : 0.44 mm), distal end yellow and reduced to a rounded point. Maxillae blackish brown, with yellow outer border provided with prominent scopulae, as long as broad, with maximum width along apical one half. Chelicera short and stout, dark reddish brown, provided with six

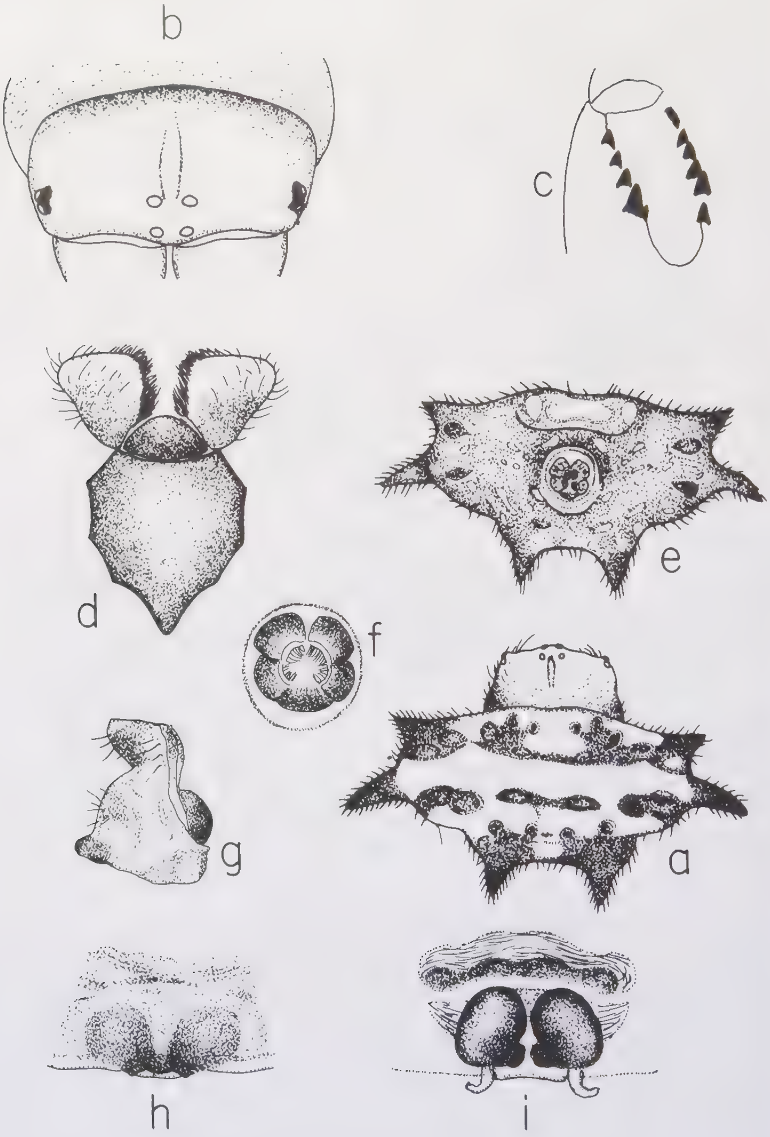


Fig. 344. Female *Gasteracantha diadesmia* Thorell form II (a); frontal view of head (b); cheliceral teeth (c); sternum, labium, and maxillae (d); abdominal venter (e); spinnerets (f); side (g), dorsal (h), and ventral (i) views of epigynum.

promarginal and four retromarginal teeth, apical tooth of promargin with a broad flat edge and basal tooth of retromargin bifurcated, boss moderate, with a long ridge reaching 80% cheliceral length. Legs, short, blackish brown with white hairs ventrally, coxa III triangular, tarsus three-clawed, each superior claw with seven or eight teeth. Leg formula 4123. Palp blackish brown apically, yellow-brown basally, single-clawed with seven teeth.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.27	1.83	1.50	1.05	8.15
2	2.44	1.16	1.66	1.38	1.00	7.64
3	1.94	0.72	1.00	1.00	0.94	5.00
4	2.88	1.05	1.83	1.61	1.11	8.48

Abdomen wider than long, yellow, with blackish bands along areas of large and brown sigilla in between anterior and median pairs of spines, 12 sigilla (six large, six small) above the yellow median transverse band connecting median spines, ten sigilla (six large, four small) below yellow median transverse band and above posterior pair of spines. Median spines posterior anterior pair. Venter black, mottled with scattered yellow spots and clothed with hairs, ringed brown basally, tubercle prominent between epigynum and orifice, like spinnerets. Epigynum bicleft below scape. Short scape, hollow or concave medially in top view. Spinnerets blackish brown inside a white ring.

Variation: Ranges of length 9.33–10.61 mm, carapace length 3–3.72 mm, width 3-5-4 mm. Abdomen length 6.33–7.5 mm, width 12.16–13.66 mm. Distance between spines taken tip to tip: anterior 13.16–14.16 mm, median 16.25–17.33 mm, ventral 4.33–4.83 mm. Two females with bulging abdominal median, one female with concave abdomen. Basal tooth of retromargin bifurcate in one female (Fig. 344c).

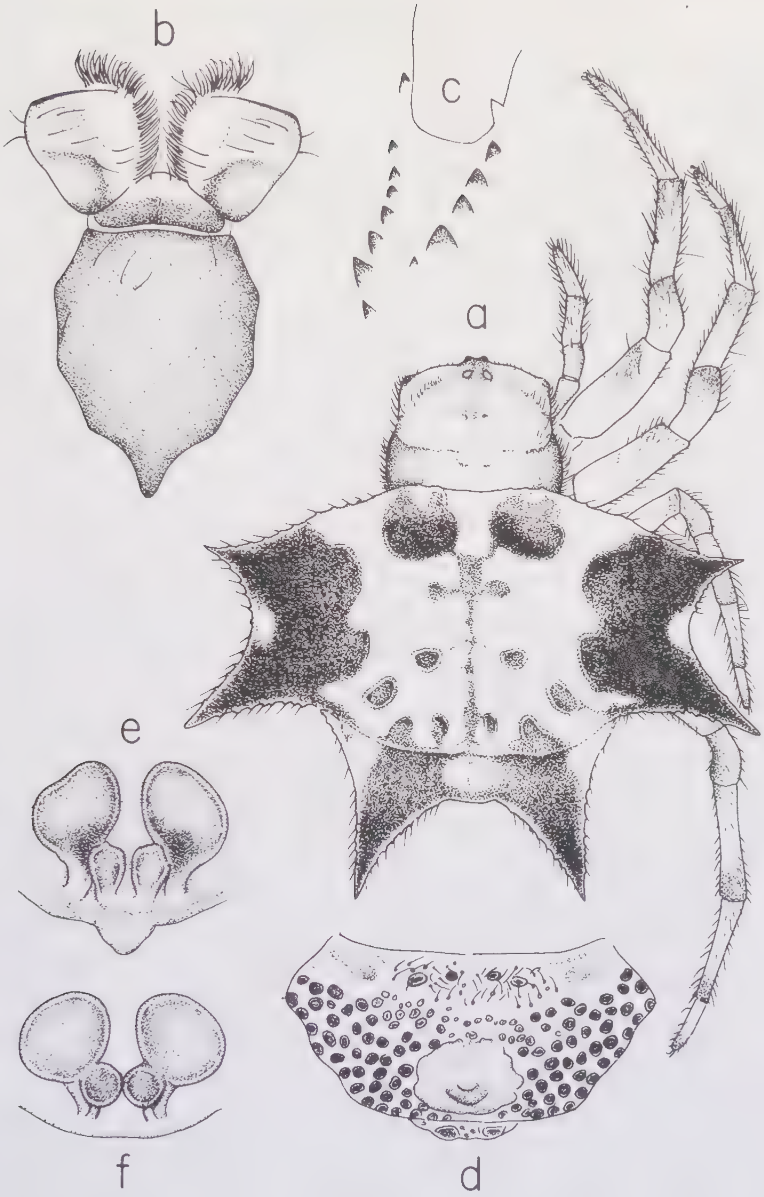


Fig. 345. Female *Gasteracantha kuhlii* C.L. Koch (a); sternum, labium, and maxillae (b); cheliceral teeth (c); ventroanterior view of abdomen (d); and dorsal (e) and ventral (f) views of epigynum.

Natural history: Two females were collected from the foliage of upland rice Dagge near a web of *Argiope catenulata* in April. The other female was taken from a fruit orchard adjacent to an upland ricefield in May.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Tanauan, Janopol Vill., two females, 22 April 1984, A.T. Barrion; one female, same data as above, 17 May 1979, A.T. Barrion.
Distribution: India, Burma, Thailand and the Philippines (new record).

Gasteracantha kuhlii C.L. Koch
(Fig. 345a–f)

Gasteracantha kuhlii C.L. Koch, 1838. Die Arachn. 4: 20.
Plectana acuminata Walckenaer, 1841. Hist. Nat. Inst. Apt. 2: 159.
Gasteracantha annulipes C.L. Koch, 1845. Die Arachn. 11: 52.
Plectana leucomelas Doleschall, 1859. Act. Soc. Ind. Neerl. 5(5): 42.
Gasteracantha annamita Simon, 1886. Act. Soc. Linn. Bordeaux 40: 148.
Gasteracantha leucomelaena Thorell, 1887. Ann. Mus. Civ. Genova 25: 231.
Gasteracantha leucomelas Simon, 1904. Miss. Pavie Indo-Chin. Arachn. 3: 283.
Gasteracantha kuhlii Dahl, 1914. Mitt. Zool. Mus. Berl. 7: 262.

Redescription:
Female: Total length 9.00 mm. Cephalothorax 2.92 mm long, 2.25 mm wide, 2.21 mm high. Abdomen 6.08 mm long, 8.92 mm wide, 3.83 mm high. Cephalothorax subsquarish, dark reddish brown, except pale yellow posterior margins of thorax. Cephalic area very high and subrectangular, with a pair of minute tubercles dorsally, and posterior end abruptly sloped to a 45° angle. Fovea distinctly Y-shaped. Eight eyes in two recurved rows. Eye diameter (mm): AME = PME = 0.11, ALE = PLE = 0.08. Eye separation: AME–AME roughly one AME diameter, AME–ALE nine times AME diameter, PME–PME 1.6 times ME diameter, PME–PLE almost 11 times PLE or eight times AME diameter. Median ocular quadrangle wider than long, and wider behind than in front. Clypeus height small, 0.7 AME diameter. Sternum black to dark reddish brown, heart-shaped, with a pointed posterior end. Labium dark brown with pale yellow distal border, slightly wider than long. Maxillae same color as labium, yellow on the inner border, and with distinct scopulae. Chelicerae stout and strong, dark brown, with prominent boss, promargin with three teeth and retromargin with six teeth. Legs black, except brownish subposterior ends of femora, patellae, and tibiae, basal one half of metatarsi and tarsi. Leg formula 4123. Pedipalps black, except yellow-brown femora and basal one half of tibiae and tarsi.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.94	1.00	1.39	1.28	0.72	6.33
2	1.89	0.88	1.22	1.22	0.69	5.90
3	1.39	0.56	0.75	0.72	0.56	3.98
4	3.33	0.67	1.31	1.39	0.72	7.42
Pedipalp	0.77	0.33	0.56	–	0.83	2.49

Abdomen yellow, except blackish brown sigilla and spots, and six spines. Anterolateral or humeral tubercles small, separated from the median spine by a narrow yellow spot. Apical spots connected to a narrow median longitudinal band dividing three pairs of sigilla, subapical yellow spot in each of the apical broad spots. Median tubercles as large as the posterior tubercles, separated by a brown sigillum in a yellow band. Posterior tubercles with an ovate yellow spot in between. Margins of abdomen and tubercles serrated. Venter of abdomen black with scattered yellow spots, a brown tubercle anterior to the spinnerets and posterior to the epigastric furrow. Epigynum with a porrect, short, and triangularly pointed scape viewed laterodorsally.

Natural history: Two females were handpicked from pigeon pea *Cajanus cajan* plants growing along the borders of upland rice in February.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Lipa City, Marauoy Vill., two females, 16 February 1988, A.T. Barrion.

Distribution: India, Bhutan, Burma, Indonesia, Malaysia, Hongkong, Japan and the Philippines.

Genus *Nephila* Leach

Nephila Leach, 1815. Zool. Miscellany: 133.

Nephila Leach are long-bodied orb-weavers comprising 45 species distributed in the Ethiopian (16 species), Oriental (15), Australian (eight) and Neotropical (six) regions. They are recognized from others by cephalothorax with a convex cephalic area more elevated than the thoracic area and armed usually with a pair of tubercles posteriorly. Labium longer than broad. Median ocular quadrangle squarish to slightly broader posteriorly. Legs strongly spinulose and very long, combined length of tarsi and metatarsi longer than the length of tibiae and patellae together. Epigyne heavily sclerotized.

Nephila maculata (Fabricius)
(Figs 346a–c, 347a–e)

Aranea maculata Fabricius, 1793. Entomol. Syst. 2: 425.
Nephila maculata Pocock, 1900. Fauna Brit. India, Arachn.: 217.

Redescription:
Female (Fig. 346a–c): Total length 42 mm long. Cephalothorax 12.00 mm long, 9.50 mm wide, 6.75 mm high. Abdomen 30.00 mm long, 11.00 mm wide, 12.00 mm high. Cephalothorax black with cephalic area much higher than the thoracic area. Subposterior part of cephalic area with a pair of small tubercles. Fovea deep and prominently transverse. Eight eyes in two recurved rows, AE in a tubercle. Eye diameter (mm): AME = 0.52, ALE = 0.50, PME = 0.40, PLE = 0.32. Eye separation: AME–AME 0.85 times eye diameter, AME–ALE 3.4 times AME diameter, PME–PME one third longer than one eye diameter, PME–PLE seven times PLE diameter. Clypeus height about 0.4 times AME diameter to one half PME diameter. Sternum black with slight humps sublaterally opposite coxae, apex concave, posterior end narrowed with coxae IV isolated from III by a yellow sclerotized plate. Labium and maxillae same color as sternum. Chelicerae black, boss well developed, promargin and retromargin each with three strong teeth. Legs black, except base of metatarsi IV and subbasal part of tibiae I and IV, long and slender without heavy spines. Leg formula 1423.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	25.00	4.52	20.00	31.00	4.51	85.03
2	21.00	4.20	16.50	25.00	4.00	70.70
3	14.50	3.50	8.50	13.00	3.50	43.00
4	24.00	4.00	15.50	24.00	4.50	72.00
Pedipalp	5.00	2.00	3.20	–	5.20	15.40

Abdomen yellowish black, dorsal median part yellow with a long black longitudinal band in the center, sublateral areas bear three or four black rectangular cells

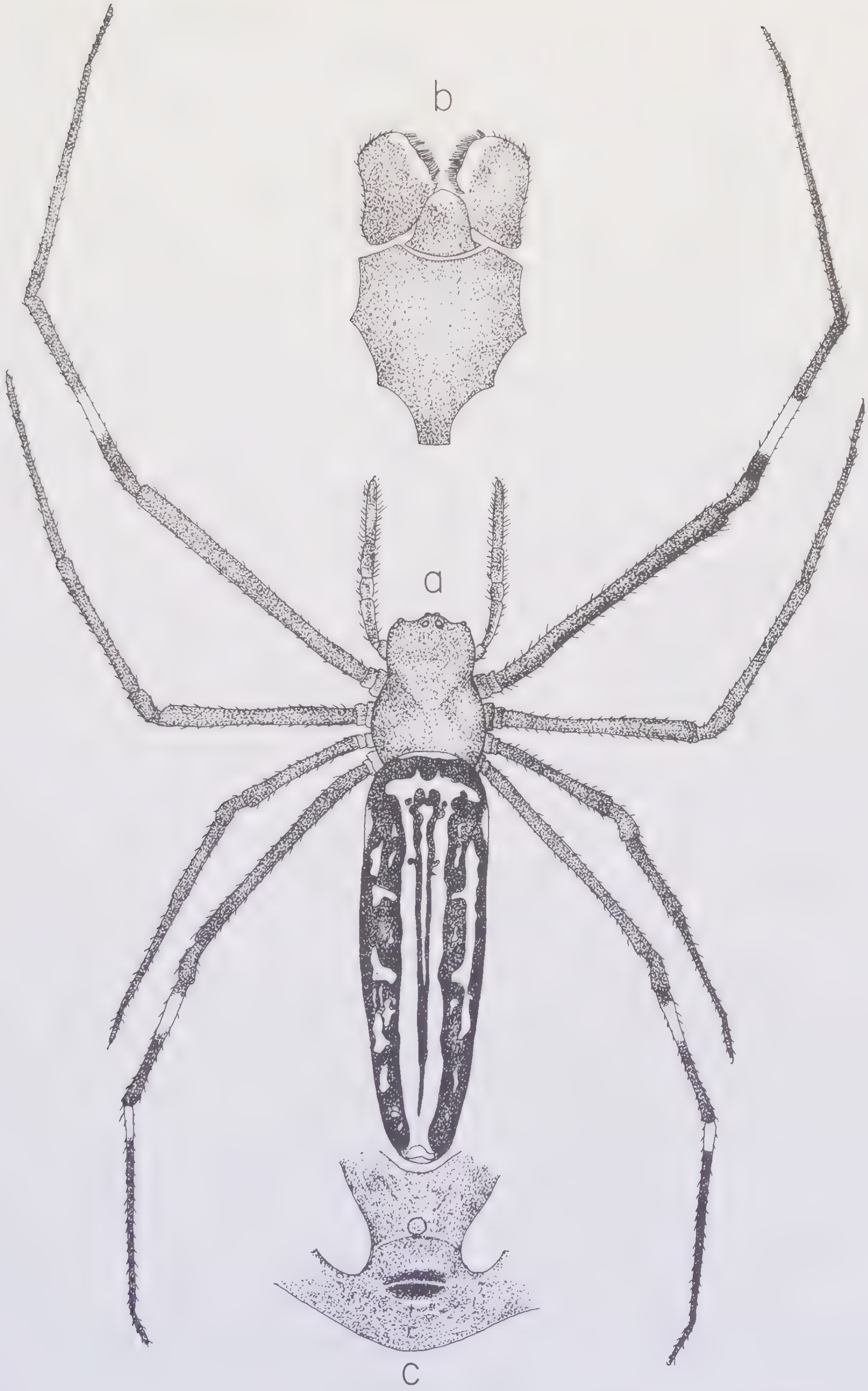


Fig. 346. Female *Nephila maculata* (Fabricius) (a); sternum, labium, and maxillae (b); and epigynum (c).

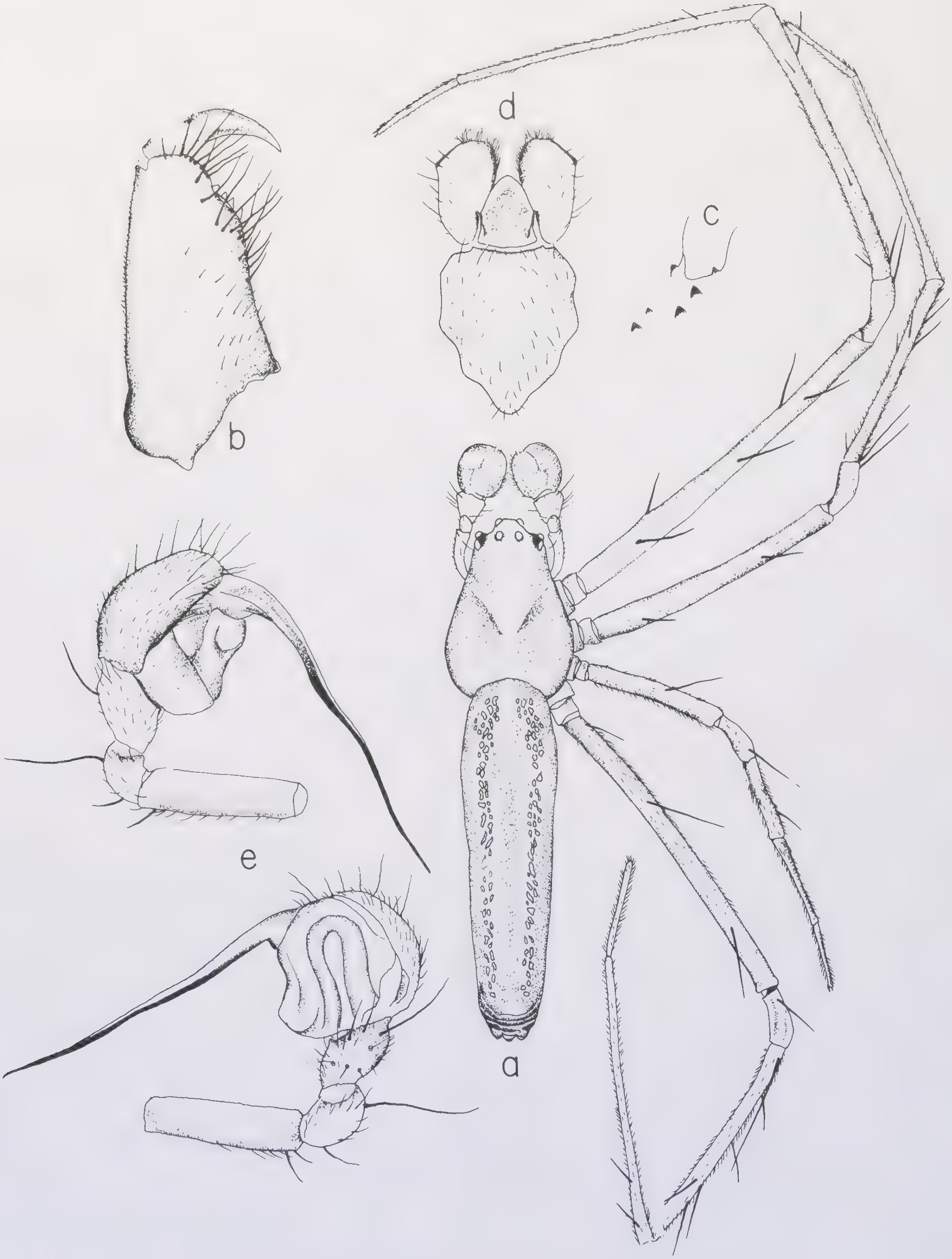


Fig. 347. Male *Nephila maculata* (Fabricius) (a); left chelicera (b); cheliceral teeth (c); sternum, labium, and maxillae (d); and lateral views of pedipalp (e).

with yellow borders. Dorsal one half of the lateral view with two or three longitudinal yellow bands separated by black bands, bottom one half black with scattered yellow spots of various designs. Scape of epigynum thin but very wide, gonopore narrow. Anterior bulge moderately high.

Male: Total length 6.00 mm. Cephalothorax 2.36 mm long, 1.40 mm wide, 1.00 mm high. Abdomen 3.64 mm long, 1.04 mm wide, 1.28 mm high. Cephalothorax brown and 1.7 times longer than wide. Eight eyes in two rows, each with black margins. AE slightly longer and more strongly recurved than PE. Eye diameter (mm): AME = 0.19, ALE = PLE = PME = 0.12. Eye separation: AME–AME shorter than one AME diameter (0.16 : 0.19 mm), AME–ALE a little longer than one ALE diameter, PME–PME as long as AME separation, one fourth longer than one PME diameter, PME–PLE almost twice eye diameter. Clypeus height about one half AME diameter. Sternum brownish yellow, longer than wide, moderately concave apically, narrowed but rounded posteriorly. Labium same color as sternum, apex yellow, narrowed but rounded, base almost straight. Maxillae similar to labium longer than wide and brownish yellow, promargin more yellowish than the retromargin. Chelicerae robust basally, long hairs around the promargin with two teeth, retromargin with three teeth. Fang minutely serrated on the inner basal one half. Legs all brown, partly blackish along apices of all tibiae, long and slender. Leg spination: femora 1 = 4-0-2-0, II = 3-0-0-0, III = 2-0-0-0, IV = 3-0-0-1, and tibiae I = 2-4-2-1, II = 2-3-1-1, III = 1-3-1-1, IV = 2-2-2-2. Leg formula 1234. Patellae with one long subapical and median setae. Tibia with a long moderately stout seta and three or four thin hairs anterior of the seta. Cymbium cup-shaped, about 0.5 times length of long and strong embolus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.83	0.83	3.50	5.83	1.83	15.82
2	3.42	0.79	2.83	4.25	1.50	12.79
3	2.00	0.50	1.25	1.83	0.75	6.33
4	3.50	0.67	2.50	3.75	1.46	11.88
Pedipalp	0.79	0.28	0.48	–	0.72	2.27

Abdomen yellowish except submedian chalk-white longitudinal bands dorsally and four transverse black bands posteriorly.

Natural history: The female was handpicked from the center of its big web (ca. 1 m in diameter) from an *Anonas* tree connected to rice in the reproductive stage in August. The huge web contained three moths of *Melanitis* and a grasshopper, *Oxya* sp. On the other hand, the male was collected from a half-broken *Nephila* web in a Themeda weed in July.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato Prov., Koronadal, Lake Sebu, Lahib Vill., one male, 19 July 1985, A.T. Barrion; *Luzon Is.*, Batangas Prov., Tanauan, Janopol Vill., two females, 26 August 1977, A.T. Barrion.

Distribution: Singapore, Burma, Papua New Guinea, Sri Lanka, India, China, Japan, Northern Australia and the Philippines.

Nephila antipodiana (Walckenaer)
(Fig. 348a–h)

Epeira antipodiana Walckenaer, 1841. Hist. Nat. Ins. 2: 93.

Argiope ornata Blackwall, 1864. Ann. Mag. Nat. Hist. 3(14): 43.

Nephila balri Simon, 1877. Ann. Soc. Ent. France 5(7): 82.

Nephila holmerae Thorell, 1881. Ann. Mus. Civ. Genova 17: 141.

Nephila antipodiana Dahl, 1912. Mitt. Zool. Mus. Ber. 6(1): 35.

Redescription:

Female: Total length 35.00 mm. Cephalothorax 14.00 mm long, 9.50 mm wide, 7.00 mm high. Abdomen 21.00 mm long, 8.50 mm wide, 9.00 mm high. Cephalothorax uniformly black to dark reddish brown, cephalic area convex, elevated, and posterior end with a pair of tubercles. Eight eyes in two moderately recurved rows. Eye diameter (mm): AME = ALE = 0.22, PME = PLE = 0.17. Eye separation: AME–AME three times eye diameter, AME–ALE nearly six times AME diameter, PME–PME twice times PME diameter, PME–PLE 5.2 times PME diameter. Clypeus height 1.7 times AME diameter. Sternum prominently rebordered along yellow lateral margins, black, with three ovoid yellow tubercles opposite coxae III and between coxae IV and a black tubercle midapically below labium. Labium black, similar to maxillae, wider than long, and narrowed apically. Maxillae longer than wide, with scopulae. Chelicerae black and robust, boss moderately developed, promargin and retromargin with three teeth each. Legs black, hair tuft prominent in the apical one half of tibiae I, II, and IV. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	21.00	4.50	17.50	26.00	4.50	73.50
2	18.50	4.00	13.00	21.50	3.50	60.50
3	11.00	3.00	6.50	10.50	2.50	33.50
4	19.00	3.60	11.00	18.00	2.80	54.40
Pedipalp	4.55	2.00	3.00	–	4.80	14.35

Abdomen 2.5 times longer than wide, yellow, with six pairs of subovate yellow spots dorsally arranged longitudinally in rows, each spot with a thin black margin. Anterior end of abdomen black, posterior end slightly tubercle-like. Laterals each with five or six yellow spots. Venter black with three transverse, chalk-white stripes. Spinnerets small, black, and uniform in size. Epigynum truncate towards posterior epigynal margin, provided with three pits viewed posteroven-

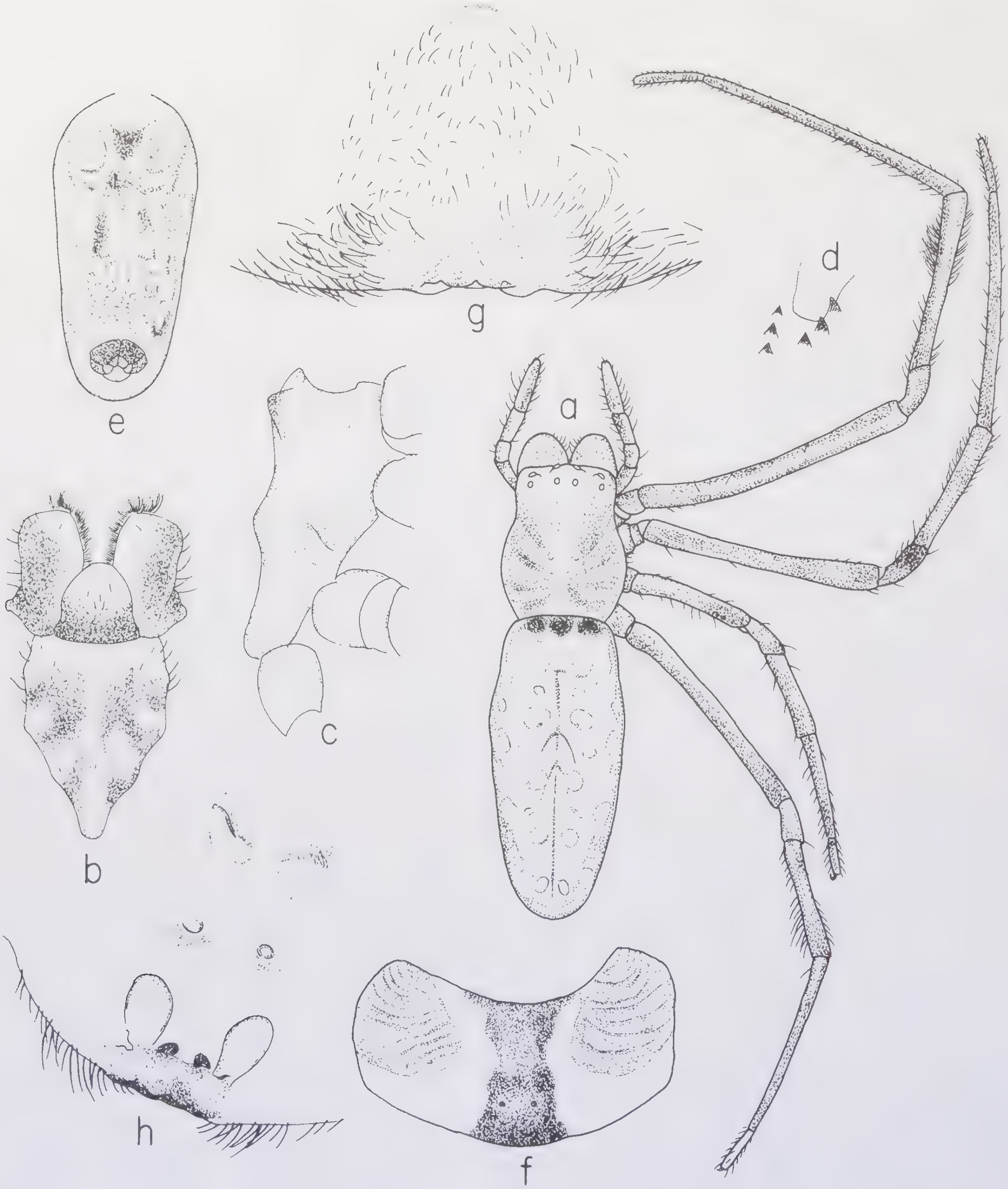


Fig. 348. Female *Nephila antipodiana* (Walckenaer) (a); sternum, labium, and maxillae (b); coxae and part of sternum (c); cheliceral teeth (d); abdominal venter (e); book lungs (f); and dorsal (g) and ventral (h) views of epigynum.

trally, spermathecae ovoid with a double-coiled insemination duct in between.

Natural history: Four immatures were collected in February from *Cajanus cajan* trees grown as wind breaker in the border of upland rice. One was caught feeding on a moth of *Helicoverpa armigera*. The adults were collected in April.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Lipa City, Marauoy Vill., four immatures, 12 February 1988, A.T. Barrion; Sto. Toribio Vill., one female, 16 April 1989, A.T. Barrion; Quezon Prov., Real, Llavac Vill., one female, 11 April 1985, M. Perez and E. Rico.

Distribution: Indonesia, Singapore, the Philippines and Thailand.

Genus *Nephilengys* L. Koch

Nephilengys L. Koch, 1871. Die Arach. Austr. (Nurnberg) 1: 144.

L. Koch (1871) erected the genus *Nephilengys* from specimens collected in Australia. Members of the genus are characterized by large body size (2 cm long); dark or black cephalothorax longer than wide, constricted along lateral margins; tibia I, II, and IV and metatarsi IV without hair tuft or hair brush; abdomen smooth and ovoid to cylindrical; epigynum with a wide septum touching epigastric furrow; embolus long, strongly curved almost at right angle subapically and with a serrated structure posterior of curved embolum. *Nephilengys* is very similar to *Nephila* Leach except for the absence of hair brushes on the legs of the former.

Nephilengys is a small genus with only five species, two occuring in India to Australia and three in Tropical Africa and America.

Nephilengys kenmorei new species
(Fig. 349a–j)

Description:

Female: Total length 6.88 mm long. Cephalothorax 2.8 mm long, 1.8 mm wide, 1 mm high. Abdomen 4.08 mm long, 2.4 mm wide, 2.28 mm high. Cephalothorax dark reddish brown and white along ocular area, with slight humps, widest between coxae II and III. Cephalic region prominent, strongly concave in front, higher than the flat thoracic region, with a notched and white-lined posterior end, lateral margins of carapace rebordered. Eight eyes in two rows, homogeneous, recurved AE shorter than PE, diameter AME > ALE > PME > PLE. Median eyes closer to each other than to their laterals. AME separation less than one eye diameter, subequal to one ALE diameter. AME–ALE separation twice ALE diameter. PME separation one half eye diameter. PME–PLE separation seven times PME separation. Lateral eyes contiguous on a tubercle. Median ocular area much wider in front than behind (0.4 : 0.28 mm). Clypeus height small, about one fourth AME diameter. Chelicerae dark reddish brown, armed with four promarginal and three retromarginal teeth. Sternum concolorous with chelicerae, labium, and maxillae, longer than broad (1.16 : 0.88 mm), widest between coxae I and II, concave apically and opposite coxae, and tapers posteriorly. Labium below one half length of maxilla, rounded apically, and procurved basally. Legs dark brown, short but setaceous coxa IV rounded and knob-like, spination on tibia I = 0-2-21, ventral spines apically paired, and patella II with two prolateral spines. Tarsi three-clawed with five teeth. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.58	0.80	1.24	1.24	0.78	5.64
2	1.40	0.72	1.10	1.04	0.72	4.98
3	1.00	0.66	0.62	0.62	0.56	3.46
4	1.52	0.76	0.96	0.90	0.62	4.76
Pedipalp	0.60	0.32	0.42	–	0.78	2.12

Abdomen yellow with short brown hairs, oblong, with three pairs of brown spots dorsomedially and two pairs apicoventrally. Spinnerets brown, almost vertical on the basal one third of abdomen. Epigynum with a broad lid-like structure, without visible protruding scape.

Etymology: Named after Dr Peter Kenmore.

Natural history: The single specimen was collected through pitfall trap in a secondary forest converted to slash-and-burn dryland rice in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype female, 14 August 1984, A.T. Barrion.

Distribution: Philippines.

Nephilengys malabarensis (Walckenaer)
(Fig. 350a–c)

Epeira malabarensis Walckenaer, 1837. Hist. Nat. Ins. Apt. 1: 103.

Nephilengys malabarensis Thorell, 1890. Ann. Mus. Civ. Genova 28: 188.

Nephila malabarensis Pocock, 1900. Fauna Br. India Arachn.: 219.

Metepeira andamensis Tikader, 1977. Rec. Zool. Surv. India 72: 181–183.

Redescription:

Female: Total length 24.83 mm. Cephalothorax 8.83 mm long, 6.00 mm wide, 6.00 mm wide. Abdomen 16.00 mm long, 9.67 mm wide, 10.42 mm. high. Cephalothorax black, clothed with stout spines, mostly concentrated in the highly elevated cephalic area. Fovea shallow. Eight eyes in two rows, AE strongly recurved, and PE moderately recurved. Eye diameter (mm): AME = 0.39, PME = 0.31, ALE = 0.28, PLE = 0.17. Eye separation: AME–AME narrower than one AME diameter, AME–ALE 1.6 times AME

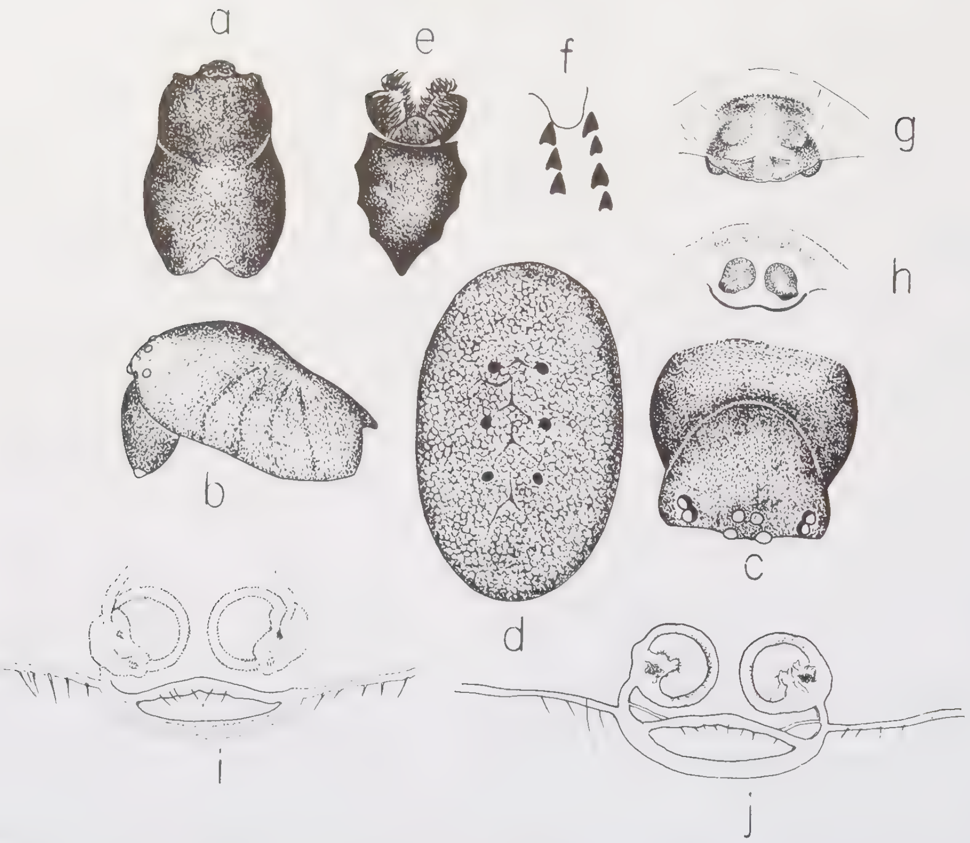


Fig. 349. Female *Nephilengys kenmorei* n. sp., dorsal (a), lateral (b), and frontal (c) views of carapace; abdomen (d); sternum, labium, and maxillae (e); cheliceral teeth (f); and dorsal (g) and ventral (h) view of uncleared and ventral (ij) view of cleared epigynum.

diameter, PME–PME twice AME diameter, AME–ALE 2.3 times AME diameter. Median ocular quadrangle slightly wider behind than long and narrower anteriorly than posteriorly. Clypeus height 1.4 times AME diameter. Sternum heart-shaped, yellow, extended posteriorly between coxae IV, margins dark brown and clothed with long brown hairs. Labium brownish yellow, with double-arrow yellow band and brown hairs, and longer than wide. Maxillae elongated, very broad distally, dark brown with pale borders, and provided with black scopulae. Chelicerae very strong and stout, black to dark brown with distinct boss. Promargin and retromargin with three strong teeth each. Middle teeth of the promargin the largest. Legs long and slender, yellow-brown alternating with dark brown in all femora, apices of patellae yellow, submedian of tibiae yellow-brown, subbasal part of metatarsi brown, and all tarsi blackish brown. Leg formula 1243. Pedipalps uniformly black.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	9.50	3.33	8.67	11.33	2.92	35.75
2	9.33	2.83	6.17	8.17	2.17	28.67
3	6.17	2.00	3.83	6.00	2.08	20.08
4	8.50	2.67	6.17	8.83	2.00	28.17
Pedipalp	2.67	1.00	1.67	–	2.83	8.17

Abdomen grayish brown dorsally, with seven diagonal yellow stripes laterally. Venter black except for a pair of lateroventral yellow to chalk-white spots. Spinnerets blackish brown and equal in size. Epigynum with an indistinct anterior bulge, rim prominently developed, a pair of large depressions separated by a narrow septum, and posterior epigynal margin straight.

Natural history: Three females were collected by sweeping a secondary dipterocarp forest with coffee, *Coffea excelsa*, and rattan adjacent to upland rice and maize in July.

Material examined: PHILIPPINES: *Luzon Is.*, Misamis Oriental, Claveria, Sta. Cruz Vill., three females, 7 July 1988, A.T. Barrion and E. Libetario.

Distribution: India, Sri Lanka, Burma, Singapore, Indonesia, Philippines (new record). Papua New Guinea, Malaysia and Australia.

Genus *Gea* C.L. Koch

Gea C.L. Koch, 1843. Die Arachniden 10: 101.
Ebaea L. Koch, 1872. Die Arachniden Australiens 1872: 130.
Gea Levi, 1968. Bull. Mus. Comp. Zool. Harv. 136(9): 322.

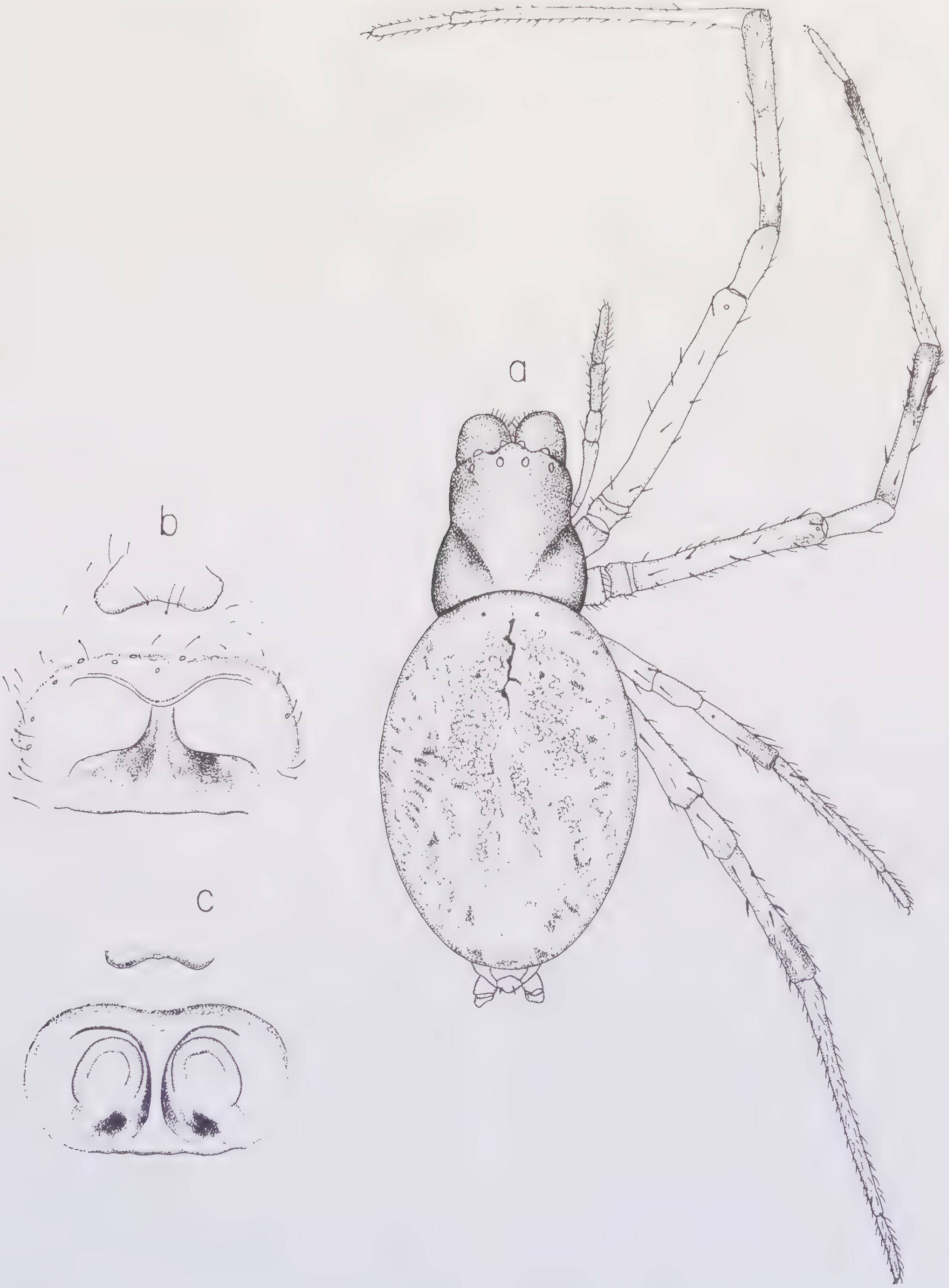


Fig. 350. Female *Nephilengys malabarensis* (Walckenaer) (a); and dorsal (b) and ventral (c) views of epigynum.

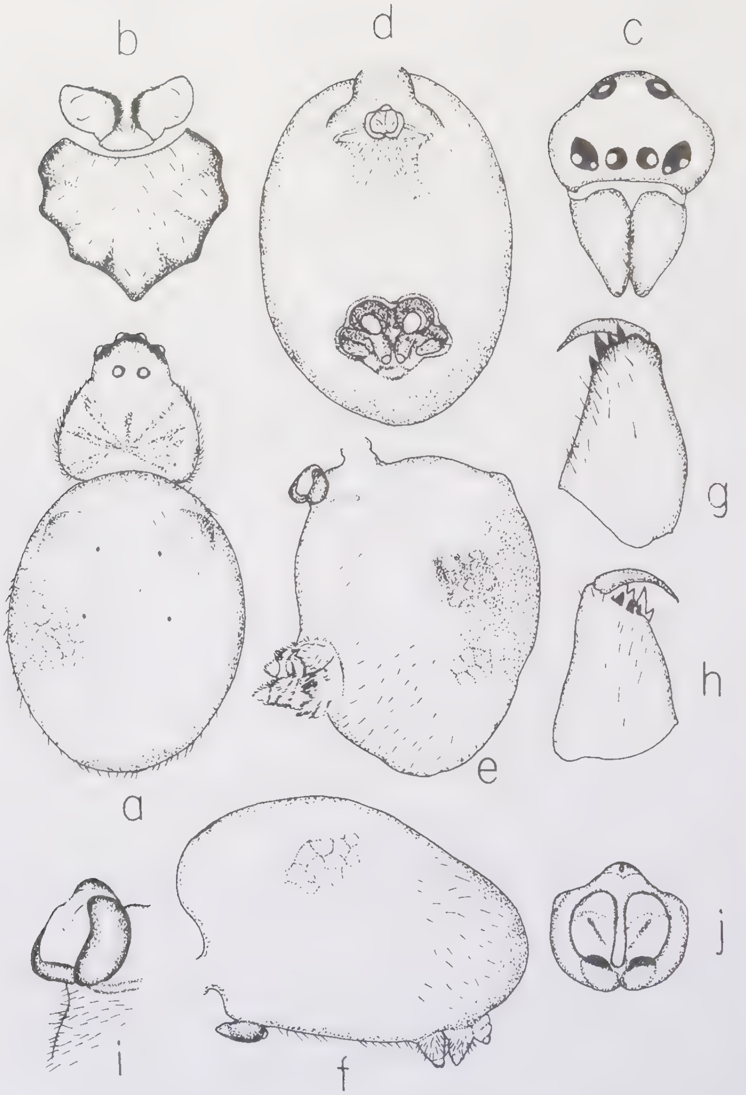


Fig. 351. Female *Gea subarmata* Thorell (a); sternum, labium, and maxillae (b); frontal view of head (c); abdominal venter (d); ventrolateral (e) and lateral (f) views of abdomen; chelicerae (gh); and side (i) and ventral (j) views of epigynum.

Members of the genus *Gea* C.L. Koch are small araneid species, less than 6 mm long. The cephalic area of the cephalothorax is moderately convex. Median ocular quadrangle wider behind than in front, forming a trapezium. AE evenly spaced or medians closer to the laterals than to each other. PME larger than AME. ALE smallest and not visible from above. Chelicerae weak, small, and with a small boss. Tarsi longer than patellae and tibiae together. Tibiae I of male curved and armed with spines.

Gea is a moderately large genus comprising less than 27 species scattered in the Oriental (ten species), Australian (seven), Neotropical (six) and Ethiopian (four) regions.

Gea subarmata Thorell
(Fig. 351a–j)

Gea subarmata Thorell, 1890. Ann. Mus. Civ. Stor. Nat. Genova 2(8): 101.

G. catenulata Thorell, 1898. Ann. Mus. Civ. Stor. Nat. Genova 19(2): 339.

G. brongersmai Chrysanthus, 1971. Zool. Verh. 113: 18.

G. corbetti Tikader, 1982. Zool. Surv. India 2: 109.

Redescription:

Female: Total length 6.47 mm. Carapace 2.2 mm long, 1.8 mm wide, 1.44 mm high. Abdomen 4.27 mm long, 3.05 mm wide, 3.11 mm high. Cephalothorax yellow-brown, eye rims black, thoracic area speckled with grayish spots, including broad deep fovea, cephalic area narrowed and distinctly yellow. Eight eyes in two rows, shorter AE strongly recurved and the longer PE strongly procurved (0.72 : 1.00 mm); diameter (mm) in decreasing order: PLE = 0.18, AME = PME = 0.14, ALE = 0.10. AME separation 1.14 times eye diameter. AME–ALE separation one third PLE diameter. PME separation 2.14 times eye diameter. PME–PLE separation 2.33 times PLE diameter. Median ocular quadrangle narrower in front than behind (0.36 : 0.56 mm).

Clypeus height 0.42 times AME diameter. Sternum dirty brown with a white median band, indented and with spur-like outgrowth opposite coxae, strongly procurved anteriorly, and tapers posteriorly. Labium yellow with a strongly recurved anterior and procurved posterior. Maxilla concolorous with labium, square in top view, and tapering basally, scopulae lining the inner and dorso-inner margins. Chelicerae yellow with four promarginal and three retromarginal teeth, second tooth of promargin the largest. Legs yellow, with gray to brown specks at base of spines and brown apices of tibiae and metatarsi, patellae with two dorsal spines each, spination in tibiae I and II = 3-6(2-2-2)-2-1, III = 1-2 (1-1-0)-2-1, IV = 1-3(1-1-1)-1-1, tarsus three-clawed with one to three and five to ten teeth in the inferior and superior claw, respectively. Leg formula 1243.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.22	1.00	1.77	2.00	1.00	7.99
2	2.33	0.94	1.77	1.94	1.00	7.98
3	1.55	0.66	0.88	1.05	0.69	4.83
4	2.44	0.88	1.50	1.83	0.77	7.42

Abdomen globular, with a pair of small tubercles anterodorsally, yellow with white and silvery spots, venter with short brown hairs, circular epigynum exserted high anteroventrally, scape dividing epigynum into two lobes, anterior epigynal bulge with a tiny orifice. Spinnerets underneath abdomen, anterior pair vertical, with a broad, posterior pair diverging and projected laterally opposite anal tubercle, median spinnerets directed towards anal tubercle.

Variation: Range in body length 5.71–6.47 mm, carapace 2.20–2.38 mm long, 1.8–2.00 mm wide; abdomen 3.33–4.27 mm long. Cephalothorax light to dark yellow-brown.

Natural history: Two females were collected from tall grasses in a levee in April. They built small vertical webs underneath grasses (ca. 2.6–7.7 cm above ground) and preyed on leafhoppers and planthoppers caught in the web. However, when disturbed, they dropped out of the web, fell on the ground, like some scarabaeids or curculionid beetles, and moved to other grasses for shelter.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm (Block A), two females, 9 April 1980, A.T. Barrion.

Distribution: India, Burma, Philippines, Borneo, Malaysia, Indonesia and Singapore.

Gea zaragosa new species

(Fig. 352a–f)

Description:

Female: Total length 7.00 mm. Cephalothorax 2.84 mm long, 2.50 mm wide, 1.64 mm high. Abdomen 4.16 mm long, 3.28 mm wide, 2.72 mm high. Cephalothorax blackish to reddish brown with yellow cephalic area and lateral margins of thoracic area. Lateral sides of cephalic area almost straight. Fovea longitudinal with three pale yellow stripes on each side. Eight eyes in two rows, AE strongly recurved but shorter than the strongly procurved PE. Eye diameter (mm): PME = 0.28, PLE = 0.24, AME = 0.18, ALE = 0.10. Eye separation: AME–AME a little shorter than AME diameter, AME–ALE one AME diameter, PME–PME one-eighth longer than eye diameter, PME–PLE one PME diameter, ALE–PLE one sixth PLE diameter. Clypeus height as long as AME separation, less than one AME diameter. Sternum blackish brown with a broad longitudinal white median band. Labium and maxillae same color as sternum, apical one half and inner portion of maxillae yellow. Chelicerae brownish yellow, promargin with four teeth and retromargin with three teeth. Legs same color as cephalothorax except for yellow bands in coxae, base and apical three fourths of femora and metatarsi, bases of patellae and subbases of tibiae, all segments setaceous and bearing spines except tarsi. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.33	1.33	2.67	2.69	1.06	11.08
2	3.22	1.28	2.50	2.72	1.11	10.83
3	2.14	0.83	1.38	1.50	0.83	6.68
4	3.44	1.00	2.08	2.44	0.97	9.93
Pedipalp	0.76	0.32	0.56	–	0.90	2.74

Abdomen subglobular, brown, with scattered white matter and a broad black band posteriorly, and with a pair of anterior tubercles. Venter light brown with white flecks. Epigynum double-lip-like, anterior one over the posterior, creating a wide concave orifice in between, anterior epigynal margin with a pair of black spots anteriorly. Spermathecae bean-shaped and parallel with each other.

Etymology: Named after the type locality.

Natural history: A single female was found on top of a stock pile of weeds, mostly *Cyperus* and *Echinochloa*, in September.

Material examined: PHILIPPINES: *Luzon Is.*, Nueva Ecija, Zaragosa, Sta. Rosa Vill., holotype female, 23 September 1984, A.T. Barrion.

Distribution: Philippines.

Genus *Argiope* Audouin

Argyope Audouin, 1826. In Savigny, Descriptions de l'Egypte 1(4): 121.

Argyopes Latreille, 1829. Les Arachnides Regne Animal 4: 248.

Argiope Simon, 1895. Hist. Nat. Araign. 1(4): 769.

Argyope Pocock, 1900. Fauna Brit. India, Arachn.: 220.

Metargyope F.O. Pickard-Cambridge, 1903. Biologia Cent. Am. (Zool.) 2: 451.

Argiope Gravely, 1921. Rec. Indian Mus. 22: 412.

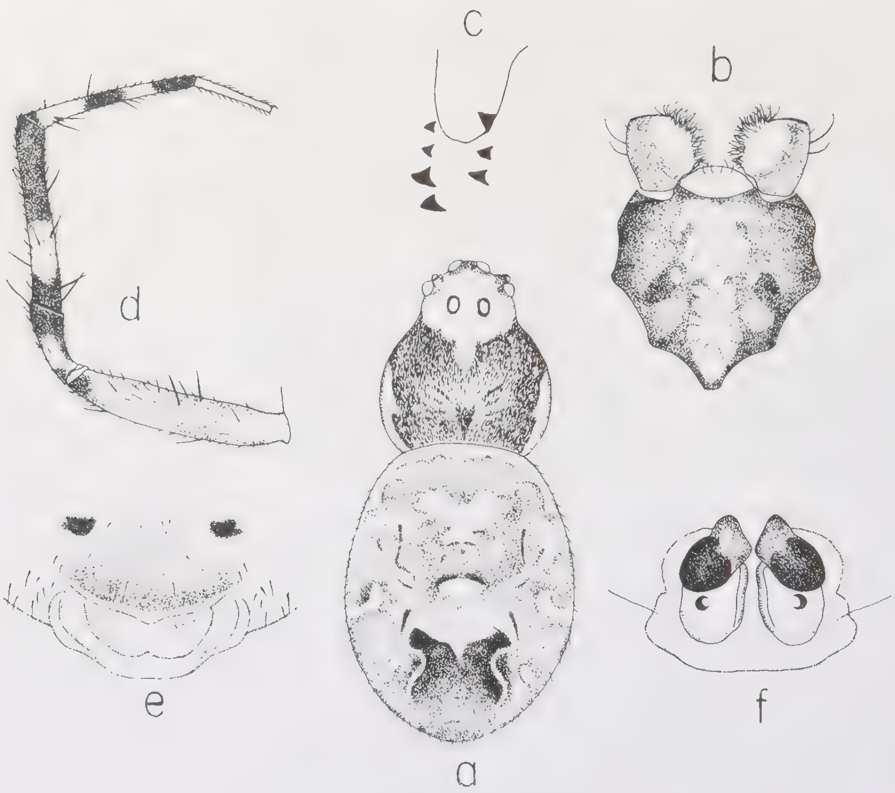


Fig. 352. Female *Gea zaragosa* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); left leg I (d); and dorsal (e) and ventral (f); views of epigynum.

Genus *Argiope* Audouin consists of moderately large orb-weaver spiders. Females more than 9 mm and males are very small. Cephalothorax flat and clothed with thick layer of short white hairs. Median ocular quadrangle longer than wide, wider behind than in front, forming a trapezium. PME closer to each other than to the laterals. PE strongly procurved. ALE smaller than PLE. LE borne on a conspicuous tubercle and close together. Chelicerae small, weak, and with a small boss. Legs long and strong, combined length of patella and tibia shorter than metatarsus and tarsus. Abdomen usually flat with variable shape. Epigynum bears a thin or thick median septum. Webs provided with a zigzag stabilimentum or two crossing stabilimenta.

Argiope catenulata (Doleschall)

(Figs 353a–e, 354a–c)

Epeira catenulata Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 30.
Argiope opulenta Thorell, 1859. Ofvers. Kongl. Vet. Akad. Forh. 16: 299.
Epeira stellata Stoliczka, 1869. J. Asiat. Soc. Bengal 38(2): 234.
Argiope pelewensis Keyserling, 1886. Die Arachn. Austral. Numberg 2(2): 136.
A. catenulata Roewer, 1942. Katalog der Araneae Berlin. 1: 741.
Metargiope ornatus var. *turricula* Marapao, 1965. Jr. Philipp. Sci. 2: 47.

Redescription:

Female (Fig. 353a–e): Total length 12.10 mm. Cephalothorax 4.60 mm long, 4.00 mm wide, 2.80 mm high. Abdomen 7.50 mm long, 4.50 mm wide, 4.10 mm high. Cephalothorax yellow with black eye margins, flat and wide thoracic area, and slightly raised cephalic area. Eight eyes in two opposite rows, AE strongly recurved and PE row strongly procurved. Eye diameter (mm): AME = 0.25, PME = PLE = 0.23, ALE = 0.15. Eye separation (mm): AME–AME = 0.25, AME–ALE = 0.30, PME–PME = 0.38, PME–PLE = 0.56, LE contiguous. MOQ-AW narrower than MOQ-PW, length subequal to MOQ-PW. Clypeus height small, 0.40 AME diameter. Sternum brownish yellow, with a longitudinal median band, longer than wide. Labium and maxillae as in the genus. Chelicerae vertical, promargin with four teeth and retromargin with three teeth. Legs long and relatively spinous, yellowish brown to brown, with slightly gray apices of tibiae. Spination in femora I = 4-8-6-5 and IV = 5-4-4-3; tibiae I = 3-8-4-4 and IV = 4-8-4-4; metatarsi I = 2-10-2-2 and IV = 4-2-5-0. Metatarsus I/tarsus I = 4.06. Leg formula 1243. Pedipalp yellow and single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.60	2.10	5.50	7.30	1.80	23.30
2	6.70	2.20	5.30	6.80	1.50	22.50
3	4.70	1.10	2.80	3.60	1.30	13.50
4	7.20	2.20	4.60	6.40	1.20	21.60
Pedipalp	1.80	0.60	1.10	–	1.70	5.20

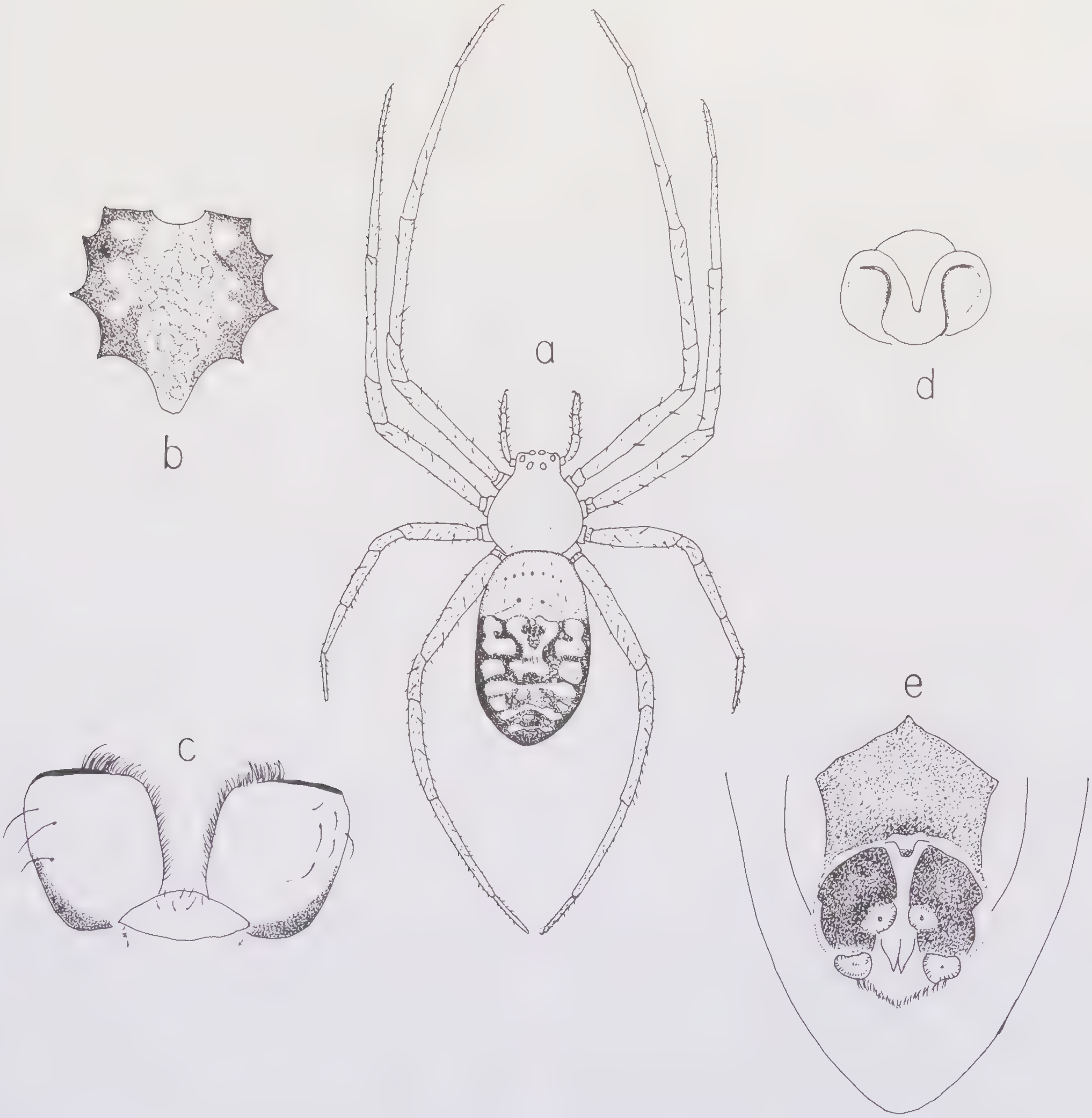


Fig. 353. Female *Argiope catenulata* (Doleschall) (a); sternum (b); labium and maxillae (c); epigynum (d); and spinnerets (e).

Abdomen oblong with unique black and yellowish white dorsal pattern or yellow with brownish yellow median band bordered laterally by two short L-shaped yellow bands, facing each other dorsolateromedially, three transverse, yellow bands in posterior one half with a yellow spot in between each band along dorsolateral ends, anterior end moderately straight to rounded, broadest in posterior one half. Venter yellow with black patches between black spinnerets and yellow semirose-like epigynum. Epigynum bears a wide septum, rim distinct, and lateral border of depression curved and dark along the outer edge.

Male (Fig. 354a–c): Total length 5.40 mm. Cephalothorax 2.40 mm long, 2.20 mm wide, 1.15 mm high. Abdomen 3.00 mm long, 1.60 mm wide, 1.50 mm high. Cephalothorax brownish red to yellowish brown with black eye margins, narrow cephalic and wide thoracic area. Eye diameter (mm): AME = 0.15, PME = PLE 0.13, ALE = 0.08. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.08, LE contiguous, PLE–PME = PME–PME = 0.23. MOQ–AW shorter than MOQ–PW, length almost as long as MOQ–PW. Clypeus height 0.53 AME diameter. Ratio of frontal eye row length (FEL) and frontal height (FH) including chelicera =

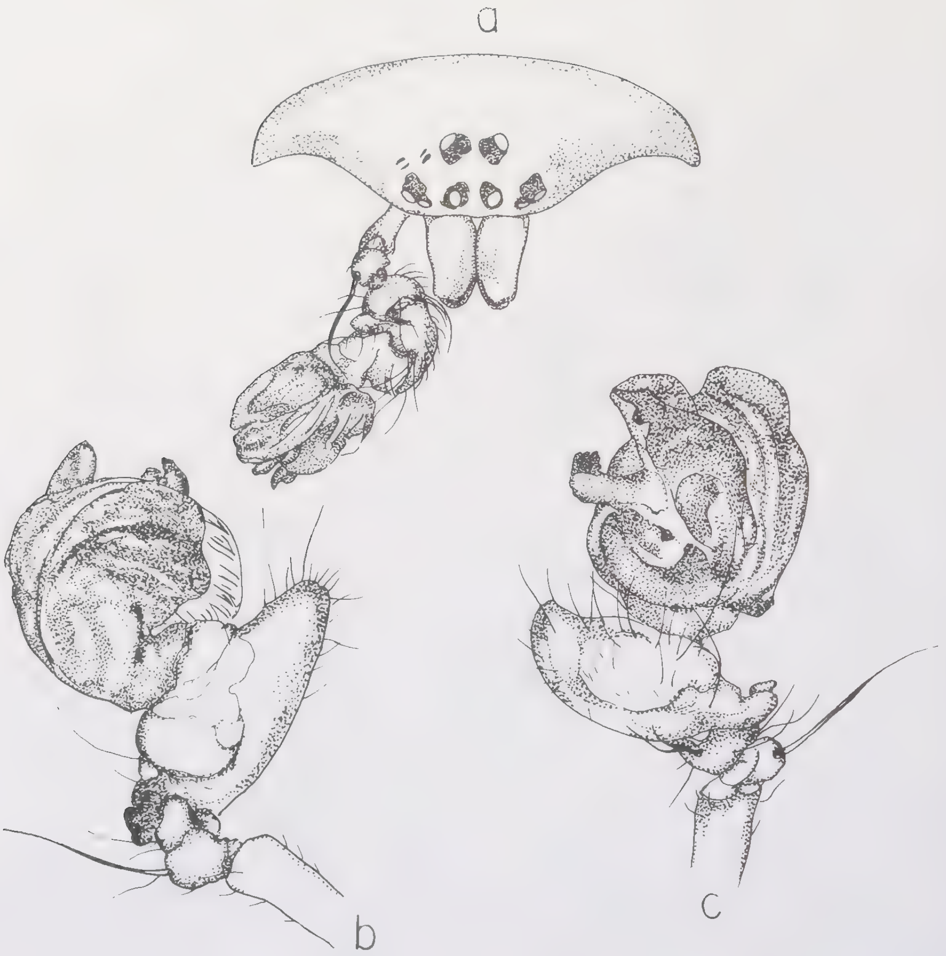


Fig. 354. Male *Argiope catenulata* (Doleschall), frontal view of head including pedipalp (a); and ventral (b) and retrolateral (c) views of pedipalp.

0.62. Sternum with a longitudinal median white band. Very similar to female except leg length and pedipalp. Legs brown with dark brown mottles, particularly femora I, II, and IV, and tibia I. Spination in femora I = 4-0-4-4 and IV = 4-3-3-3; tibiae I = 4-8-3-2 and IV = 2-8-2-2; metatarsi I = 2-2-1-1 and IV = 3-5-3-1. Metatarsus I > femur I, femur II > metatarsus II, metatarsus I/tarsus I = 2.78. Leg formula 1243. Pedipalp slightly shorter than femur III, tibia subglobular prolaterally, with dorsal hairs. Paracymbium J-shaped. Conductor broad and fan-like, complex conductor with a sclerotized truncate tip on upper branch. Embolus evenly curved and sharply pointed apically. Median apophysis three-pronged with an acutely pointed basal process, a large median and a slender to slightly curved anterior process. Cymbium rounded anteriorly with three to five long bristles in apical one fourth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.90	1.10	2.35	3.20	1.15	10.70
2	3.10	0.95	2.40	3.00	1.05	10.50
3	1.80	0.60	1.00	1.40	0.70	5.50
4	2.90	0.80	1.70	2.60	0.90	8.90
Pedipalp	0.40	0.20	0.23	–	0.93	1.76

Abdomen yellowish with about 16 sigilla, dorsal pattern as in female, anterior margin with spines, and dorsolateral margins with a black longitudinal line.

Natural history: Immatures are common in the late vegetative stage of the rice plant and adults abound most in the booting to flowering stage.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Iriga Vill., five females and four immatures, 21 September 1981, R. Apostol; Bangag Vill., two females, 6 August 1984, A.T. Barrion; Pangasinan Prov., Manaoag, Lipit Vill., three females and 12 immatures, 17 August 1977, A.T. Barrion and J. Bandong; Pao Vill., four females and one male, 3 February 1978, J. Bandong; Ifugao Prov., Banawe, eight females, two males, and 103 spiderlings, 28 March 1979, A.T. Barrion; Nueva Viscaya Prov., Cabanatuan, Sto. Domingo Vill., two females and 142 immatures, 10 February 1989, G. Aquino; Quezon Prov., Real, Llavac Vill., six females and one male, 18 March 1984, R. Apostol; Laguna Prov., Siniloan, Magsaysay Vill., two females and four immatures, 30 August 1985, A.T. Barrion; Victoria, Masapang Vill., 12 females, two males, 48 spiderlings, 15 March 1980, D. Guba and G. Aquino; San Benito Vill., 11 females and five males, 17 April 1980, P. Pantua; Los Baños, IRRI Farm, 18 females, ten males, 208 immatures, March–April 1978, M. Perez and A.T. Barrion; Liliw, Tuybaana Vill., 13 females, two males, 106 immatures, 7 September 1981, T.J. Perfect; Batangas Prov., Tanauan, Cale Vill., six females, 184 immatures, 3 April 1979, O. Serrano; Laurel, eight females, 3 April 1979, O. Serrano; Lian, two females and one male, 10 March 1989, M. Perez; Cavite Prov., Alfonso, three females, 10 March 1989, M. Perez; *Mindoro Is.*, Mindoro Oriental Prov., San Jose, two females, 20 July 1982, O. Mochida; Camarines Norte Prov., Daet, ten females and two males, 31 August 1988, B. Garcia and A.T. Barrion; Albay Prov., Cagsawa, four females and one male, 31 August 1988, M. Perez and J.L. Catindig; Sorsogon Prov., Sorsogon, one male, 31 August 1988, A. Paladan; *Leyte Is.*, Leyte Prov., Palo, one female and two subadult females, 17 July 1985, A.T. Barrion; Baybay, Visca Vill., two females and one male, 16 July 1985, A.T. Barrion; *Panay Is.*, Iloilo Prov., Oton, 12 females, two males, 68 immatures, 17 February 1981, A.T. Barrion; Capiz Prov., Dumarao, two females, 21 April 1985, S. de Sagun; Brooke's Pt., one female and one male, 27 September 1984, A.T. Barrion; *Mindanao Is.*, South Cotabato Prov., Koronadal, Morales Vill., two females, 5 January 1982, A.T. Barrion; Uno Vill., seven females and two males, 28 April 1986, A.T. Barrion; Misamis Oriental Prov., Claveria, five females and two males, 28 April 1986, A.T. Barrion; Misamis Oriental Prov., Claveria, five females and one male, 9 October 1985, E. Libetario and A.T. Barrion; Agusan del Sur, Del Monte, two females and one male, 12 July 1979, A.T. Barrion. **INDIA**: Tamil Nadu, Madurai, one female, 2 April 1990, M.S. Venugopal. **BANGLADESH**: Dacca, Joydevpur, five females and one male, 23 October 1985, N.Q. Kamal. **VIETNAM**: Hanoi, Plant Protection Research Station, five females and eight immatures, 6 August 1990, A.T. Barrion; Tien Giang Prov., Cay Lay, 12 females and one male, 18 August 1990, A.T. Barrion; Vung Thau, one female with egg cocoon, 19 August 1990, P. Pantua. **THAILAND**: Prachinburi Prov., PRRI Station, eight females, one male, 72 immatures, 26 July 1989, A.T. Barrion; Charchaensao Prov., Nang Pong Area, one female, 7 August 1989, A.T. Barrion. **CAMBODIA**: Suay Peng, Ta Saang, one subadult female and five immatures, 18 October 1989, J. Bandong; Proteah Tlain, 12 immatures, 19 October 1985, J. Bandong; Takeo Prov., Bati District, one female and 11 immatures, 20 October 1985, J. Bandong; Prey Pdau, Kampung Spen, two subadult females, 21 October 1985, J. Bandong. **INDONESIA**: Central Java, Kaliurang, 13 females and four males, 21 August 1989, A.T. Barrion; Yogyakarta, Klaten, Kerang Anon, 12 females, two males, five subadult females, 22 August 1989, A.T. Barrion.

Distribution: Throughout South and Southeast Asia.

Argiope luzona (Walckenaer)

(Fig. 355a–g)

Epeira luzona Walckenaer, 1841. Hist. Natur. Ins. Apteres, Paris 2: 109.

Argiope luzona Simon, 1877. Ann. Soc. Entomol. France 5(7): 74.

Redescription:

Female: Total length 14.67 mm. Cephalothorax 6.67 mm long, 5.67 mm wide, 3.00 mm high. Abdomen 8.00 mm long, 8.00 mm wide, 6.00 mm high. Cephalothorax yellow-brown, cephalic area with nearly straight lateral margins distinct from the bulging margins of the thoracic area. Fovea wide and moderately deep. Eye margins black, recurved AE slightly shorter than the procurved PE. Eye diameter (mm): AME = 0.32, PME = 0.30, PLE = 0.28, ALE = 0.16. Eye separation: AME–AME 0.8 eye diameter, AME–ALE ca. five times ALE diameter, PME–PME 0.83 eye diameter, PME–PLE 3.4 times PLE or 3.2 times PME diameter. Clypeus height three fourths of AME diameter. Sternum mostly chalk-white, except blackish brown spots opposite coxae I and between coxae II and III, chalk-white band extended to middle and entire apical two thirds of labium. Maxillae yellow, except brown posterior one half, apex rounded and subbasally constricted on the lateral side. Chelicerae brown, with yellow tinge, promargin with four teeth and three in the retromargin. Legs brown, long, and slender, spines short and thin, and without bands. Leg formula 2143. Pedipalps yellow except brown setae and claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	10.92	3.33	9.00	10.83	2.33	36.41
2	10.50	3.33	8.83	11.50	2.50	36.66
3	7.50	2.17	4.58	6.17	1.33	21.75
4	11.67	3.00	7.50	10.17	1.83	34.17
Pedipalp	2.83	0.92	1.50	–	2.50	7.75

Abdomen yellowish brown in six broad alternating yellow and brown transverse bands, starting from the anterior to the posterior, as broad as long, with a truncate anterior and narrowed posterior. Three pairs of sigilla. Brown bands with patches of irregularly scattered obovate to globular yellow spots. Venter of abdomen with a pair of sublateral chalk-white longitudinal bands, subapical and submedian parts bulging, enclosed black area between epigynum and spinnerets, with eight pairs of yellow spots. Epigynum with a prominent anterior bulge, narrow septum deeply notched anteriorly but well rounded in lateral view, flange short, posterior plate a little wider than septum, depression moderately narrow, spermathecae a pair of parallel oblong structures with slight constriction in the middle.

Natural history: An adult female was collected from a grass panicle of *Echinochloa* sp. growing with ratoon rice in May. Another female was caught from *Vigna* sp. in November. Two additional females were collected by sweep net from mungbean, *Vigna radiata* L. (Wilczek), in March.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Sta. Rosa, Balibago Vill., one female, 17 May 1990, A.T. Barrion; Batangas Prov., Tanauan, Luta del Sur Vill., one female, 28 November 1975, R.F. Apostol;

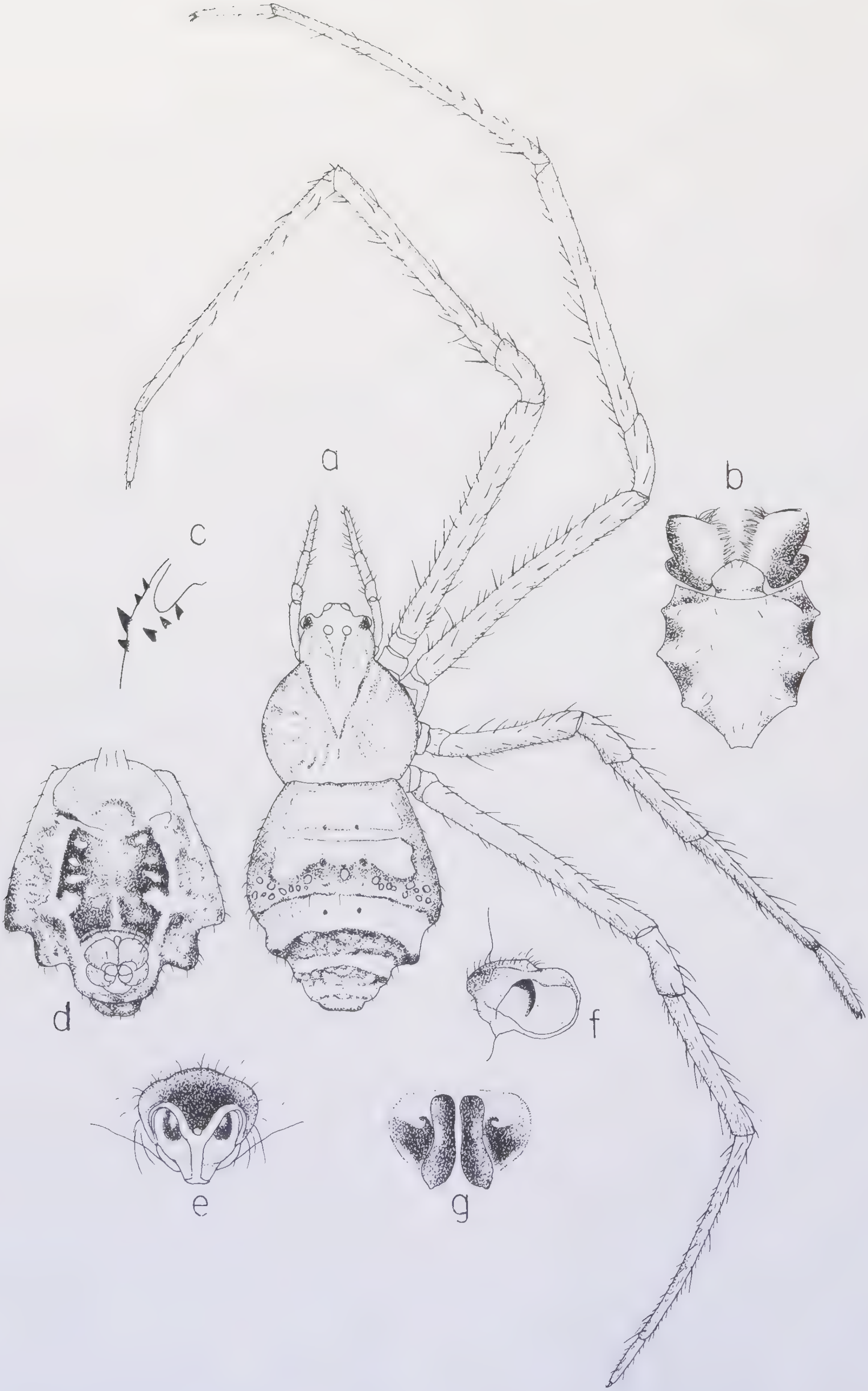


Fig. 355. Female *Argiope luzona* (Walckenaer) (a); sternum, labium, and maxillae (b); cheliceral teeth (c); abdominal venter (d); and dorsal (e), lateral (f), and ventral (g) views of epigynum.

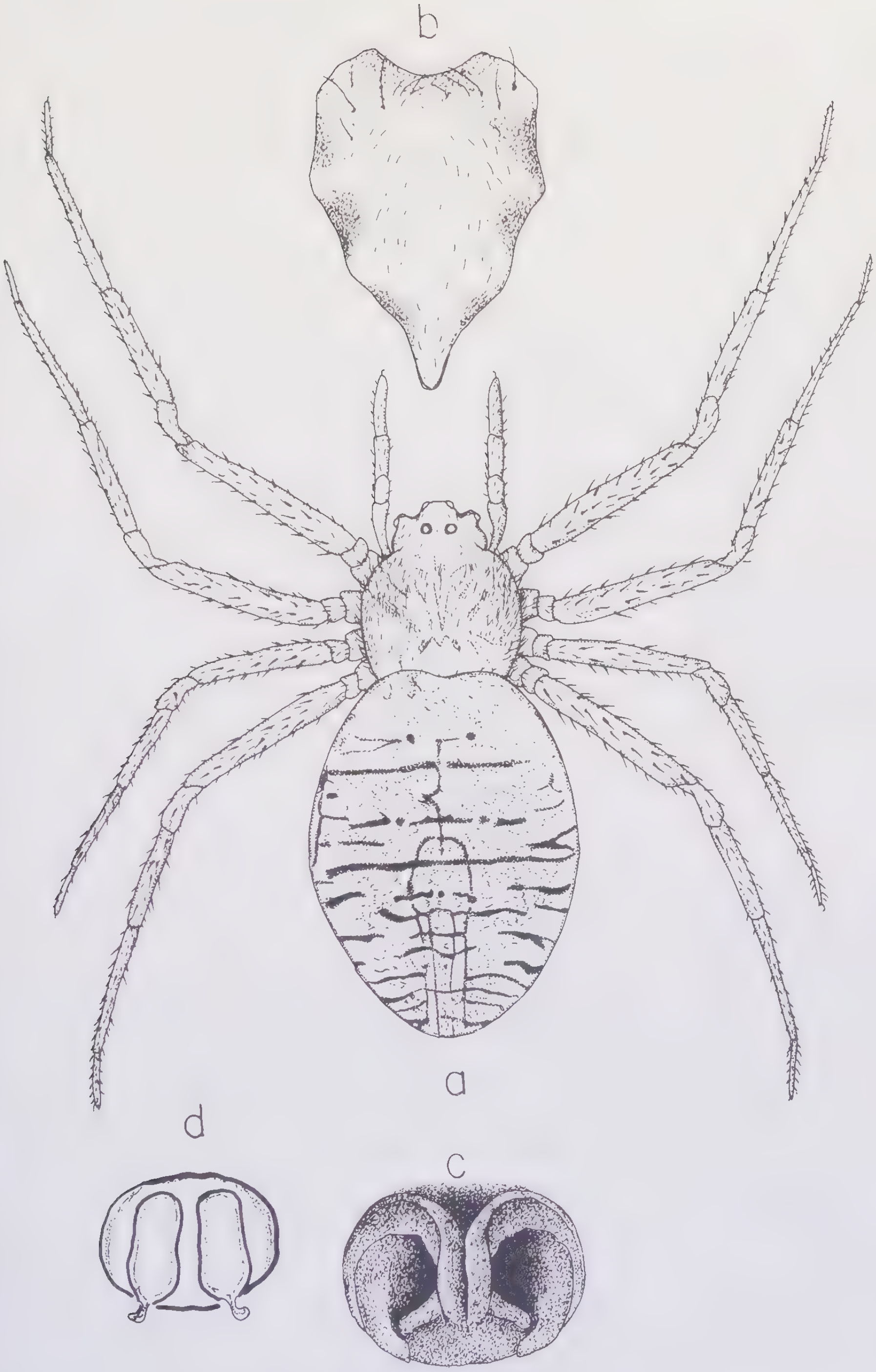


Fig. 356. Female *Argiope aemula* (Walckenaer) (a); sternum (b); and dorsal (c) and ventral (d) views of epigynum.

Cagayan Prov., Solana, Bangag Vill., two females, 6 March 1981, B. Canapi and A.T. Barrion. One female has a cream-colored cocoon 55 mm long and 33 mm wide. The posterior one half is three to four times wider than the narrow apical one half. The orb-web was not observed.

Distribution: Philippines.

Argiope aemula (Walckenaer)

(Figs 356a–d, 357a–f)

Epeira aemula Walckenaer, 1841. Hist. Nat. Ins. Apt. 2: 118.

E. striata Doleschall, 1857. Natuurw. Tijdschr. Ned. Indie 13: 415.

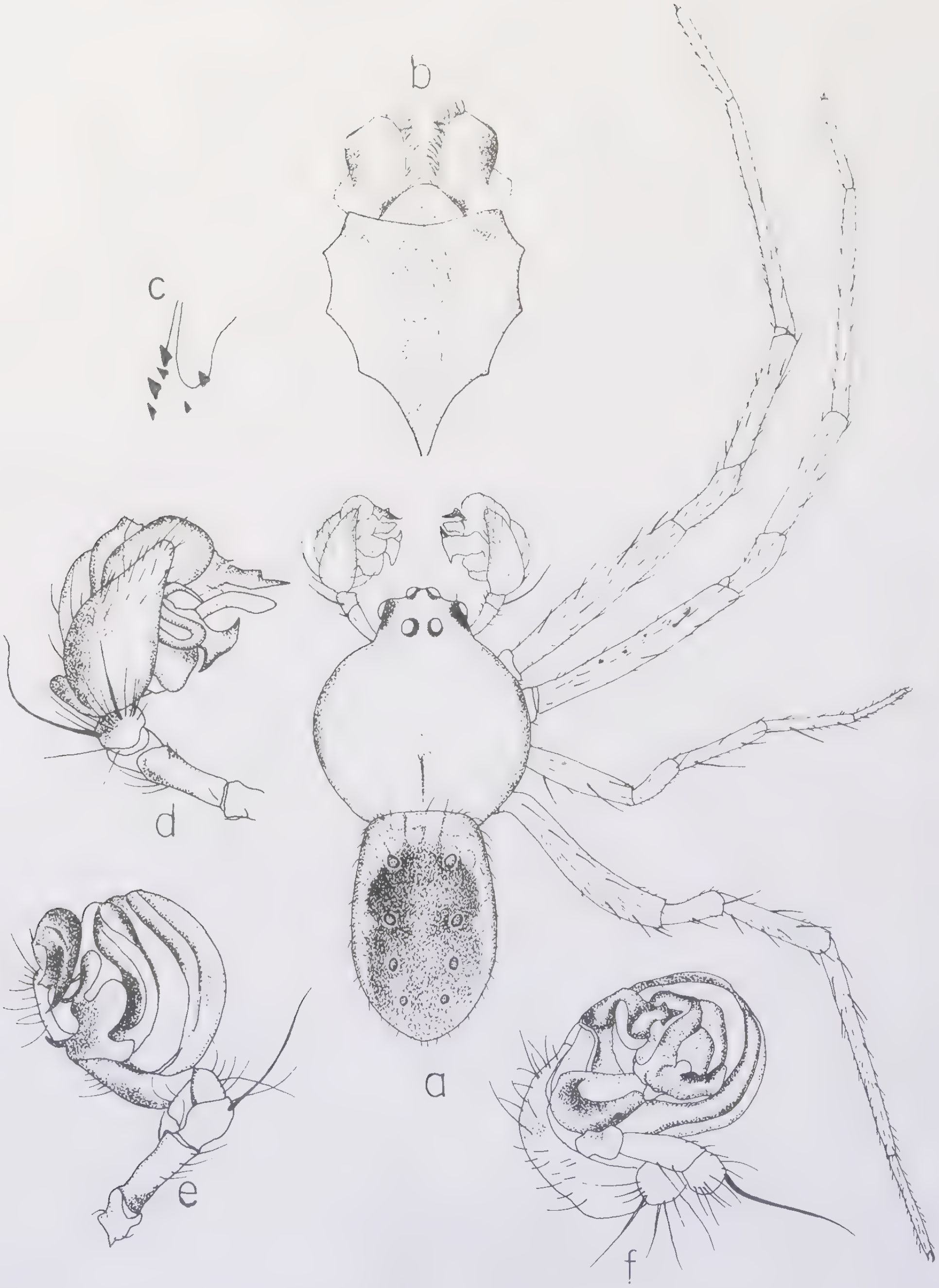


Fig. 357. Male *Argiope aemula* (Walckenaer) (a); sternum, labium, and maxillae (b); cheliceral teeth (c); and lateral (de) and ventral (f) views of pedipalp.

Argiope aemula Thorell, 1877. Annl. Mus. Civ. Genova 25: 164.
A. trivittata Karsch, 1891. Berl. Ent. Z. 36(2): 280.
Metargiope ornatus var. *lineatus* Marapao, 1965. Jr. Philipp. Sci. 2: 46.
Argyope aemula Pocock, 1900. Fauna Brit. India Arachn: 223.

Redescription:

Female (Fig. 356a–d): Total length 25.92 mm. Cephalothorax 8.75 mm long, 7.50 mm wide, 3.50 mm high. Abdomen 17.17 mm long, 11.00 mm wide, 9.83 mm high. Cephalothorax brownish, clothed with yellowish white hairs, and eye margins black. Cephalic area about one half of thoracic area. Eye diameter (mm): AME = PME = 0.28, PME = 0.25, ALE = 0.16. Eye separation: AME–PME = 0.8 AME diameter. AME–ALE 5.2 times ALE or three times AME diameter. Clypeus height a little over one half AME diameter. Sternum black, a broad longitudinal band present at middle, with arms toward coxae II and III and in between coxae IV. Labium yellow, except brown base, much wider than long, apex narrowed and rounded. Maxillae mostly yellow except black outer one third. Chelicerae moderately robust, boss developed, promargin with four teeth and retromargin with only three. Legs long and slender, venter of coxae with blackish brown spots, femora with alternating yellow and blackish brown bands, patellae with yellow spots laterally, tibiae and metatarsi black with two yellow bands, and tarsi black. Leg formula 1243. Pedipalps yellow with brown spines.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	11.67	3.83	9.50	12.67	2.50	40.17
2	11.33	3.83	9.33	12.67	2.33	39.49
3	8.00	2.67	8.17	6.00	0.92	25.76
4	13.17	3.33	7.42	11.00	1.83	36.75
Pedipalp	2.83	1.17	1.67	–	2.83	8.50

Abdomen yellow, broadest towards anterior, with three transverse silvery white bands and 17–18 thin transverse black bands, bands more widely separated in the anterior one half and without longitudinal connections, near each other in the posterior one half and with longitudinal connections, creating rectangular to subovate yellow bands. Six pairs of sigilla. Anterolaterals with a tubercle. Venter of abdomen blackish brown, with a pair of parallel longitudinal chalk-white bands sublaterally, median one half of each band with a short bulge, apical one half enclosed by two white bands, with a pair of subtriangular white bands apically and ovate white bands posteriorly. Median pair of spiracles projected posteriorly. Epigynum with a swollen median septum, forming a V-shape anteriorly and curved downward like a horn, reaching posterior of septum. Laterals of epigynum with a large subspherical orifice. Epigastric plate with six to eight transverse striae.

Male (Fig. 357a–f): Total length 6.90 mm. Cephalothorax 3.20 mm long, 2.80 mm wide, 1.50 mm high. Abdomen 3.70 mm long, 2.00 mm wide, 2.30 mm high. Cephalothorax reddish brown with black eye margins, similar to *A. catenulata*. Eye diameter (mm): AME = PME = PLE = 0.13, ALE = 0.10. Eye separation (mm): AME–AME = ALE–AME = 0.10, PME–PME = 0.21, PME–PLE = 0.23. MOQ-AW as long as height, slightly shorter than MOQ-PW. Clypeus height smaller than AME diameter. Ratio of FEL : FH = 0.60. Sternum yellowish brown with a white longitudinal median band, interrupted at midlength. Labium and maxillae typical of the genus. Chelicerae vertical, yellowish, with brown to gray patches. Promargin bears four teeth. Legs brown with dark spots, metatarsi and tarsi yellowish. Spination in femora I = 4-0-1-4-3 and IV = 4-3-1-3, tibiae I = 2-5-3-2 and IV = 2-4-1-3, metatarsi I = 2-5-1-1 and IV = 1-6-3-2. Metatarsus I/tarsus I = 2.58. Coxae III tubercles-like. Leg formula 1243. Pedipalp 0.55 of femur I length. Palpal organ very similar to *A. catenulata*, except for blunt teeth of median apophysis, narrow conductor, embolus with a seam, and short pendant at the bottom.

Abdomen with a broad whitish yellow anterior band and brown dorsum, provided with four pairs of brown spherical sigilla. Anterior margin with at least 12 black setae. Laterals with black stripe, venter black medially and white marginally.

Length of leg and pedipalp segment (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.15	0.90	2.40	3.10	1.20	10.75
2	3.10	1.00	2.30	2.80	1.00	10.20
3	2.10	0.70	1.15	1.30	0.70	5.95
4	2.90	0.90	1.80	2.25	0.80	8.65
Pedipalp	0.50	0.20	0.15	–	0.90	1.75

Natural history: A subadult female on her web with cross-shaped stabilimentum was collected by a sweep net from the top canopy of dryland rice (Dagge variety) in August, and one immature and one subadult female from UPLRi-5 rice variety in September. Adults were collected in October to April.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Janopol Vill., one female and one male, 8 October 1977, O. Serrano; Cale Vill., two females, 12 April 1989, E. Rico; one subadult female, 25 August 1987, A.T. Barrion and M. Perez; *Mindanao Is.*, Misamis Oriental Prov., Claveria, Kalilangan Vill., one subadult female and one immature, 23 September 1988, A.T. Barrion.

Distribution: India, Philippines, Sri Lanka, Burma, Taiwan, Thailand, China, Malaysia and Indonesia.

Argiope sapoa new species

(Fig. 358a–e)

Description:

Male: Total length 4.30 mm. Cephalothorax 2.10 mm long, 1.80 mm wide, 0.80 mm high. Abdomen 2.20 mm long, 1.60 mm wide, 1.70 mm high. Cephalothorax gray-brown, with yellow marginals and a dagger-like median towards fovea, and black eye margins. Eye pattern as in *Argiope*. Eye diameter (mm): AME = PLE = 0.15, PME = 0.13, ALE = 0.08. Eye separation (mm) = AME–AME = 0.15, AME–ALE = 0.05, LE contiguous, PLE–PME = 0.23, PME–PME = 0.25. MOQ-AW shorter than MOQ-PW, length as long as MOQ-PW. Ratio of FEL and FH = 0.83. Clypeus height small one fifth AME diameter. Sternum longer than wide, brownish with a yellow longitudinal posteromedian band. Labium and maxillae as in the genus. Chelicerae vertical, yellowish gray, broad basally, and narrowed anteriorly. Legs yellow with brownish gray bands in the middle and apical one third of femur, apical one half of patella, base and apical one half of tibia, and tip of metatarsus. Spination in femora I = 3-3-4-3 and IV = 3-3-1-1; tibiae I = 2-8-3-2 and IV = 2-6-2-0; metatarsi I = 1-4-1-1 and IV = 2-0-2-0. Metatarsus < femur I, metatarsus I/tarsus I = 2.32. Leg formula 1243. Pedipalp 1.5 times longer than femur III, patella and tibia yellow, patella with a distinctly curved seta. Apex of paracymbium extended to the outside, highly sclerotized. Embolus thin and relatively long, passing a groove, conductor with a small pouch-like process subapically. Median apophysis large, tooth-like, horn-

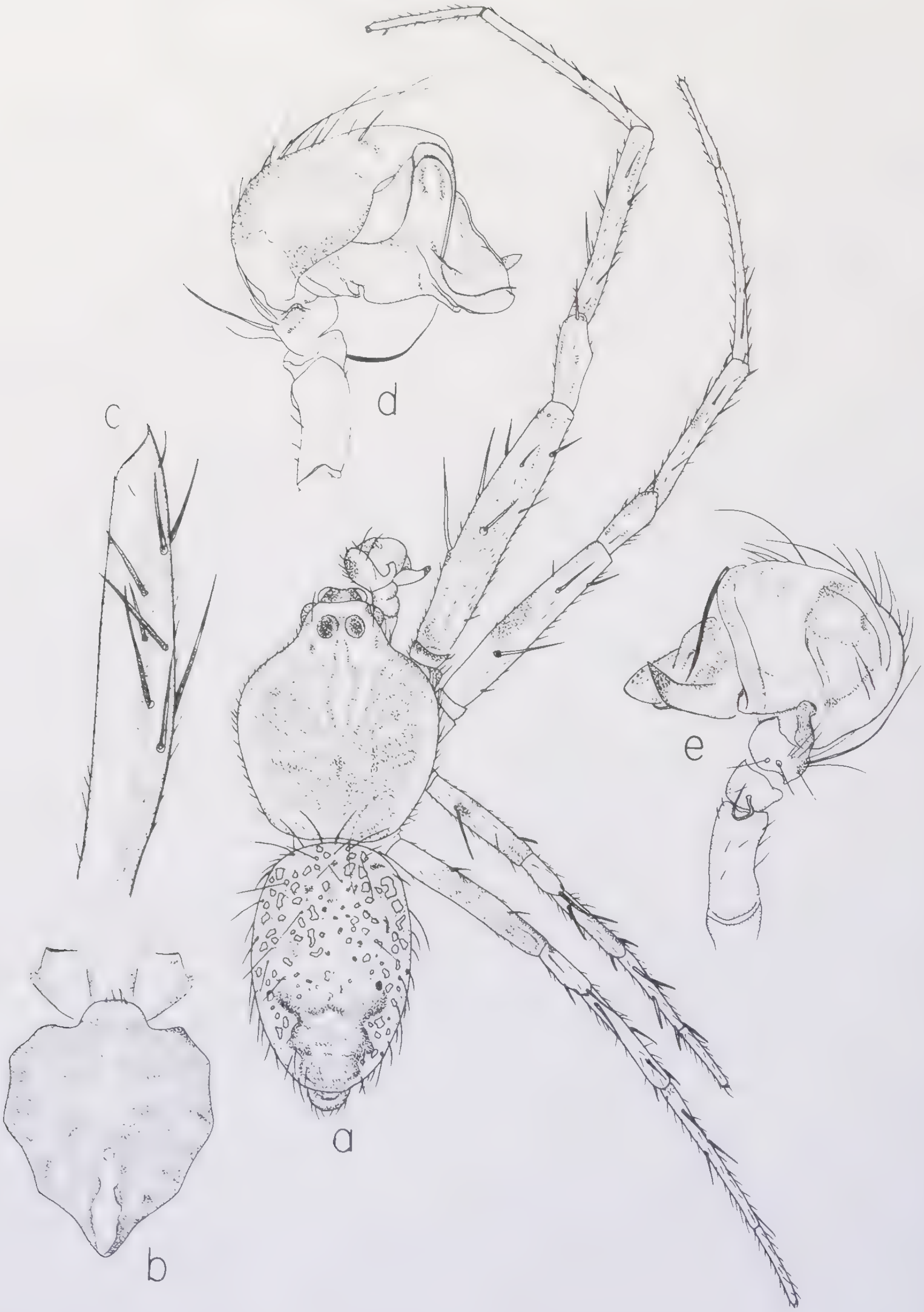


Fig. 358. Male *Argiope sapoa* n. sp. (a); sternum, labium and maxillae (b); femur I (c); and lateral views of pedipalp (de).

like in ventral view, with a subperpendicular process submedially supporting the conductor. Cymbium brownish gray with a yellow base.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	0.80	1.60	2.20	0.95	8.15
2	2.40	0.80	1.80	2.20	0.90	8.10
3	1.40	0.50	0.90	1.10	0.65	4.55
4	2.30	0.65	1.25	1.80	0.75	6.75
Pedipalp	1.40	0.11	0.13	–	0.50	2.14

Abdomen whitish yellow with dark brown folium and entire dorsum uniformly clothed with long bristles.

Etymology: Named after the subperpendicular process on median apophysis supporting ('sapo' in Tagalog) the conductor.

Natural history: The single holotype male was found in a pitfall trap in December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 28 December 1984, M. Perez.

Distribution: Philippines.

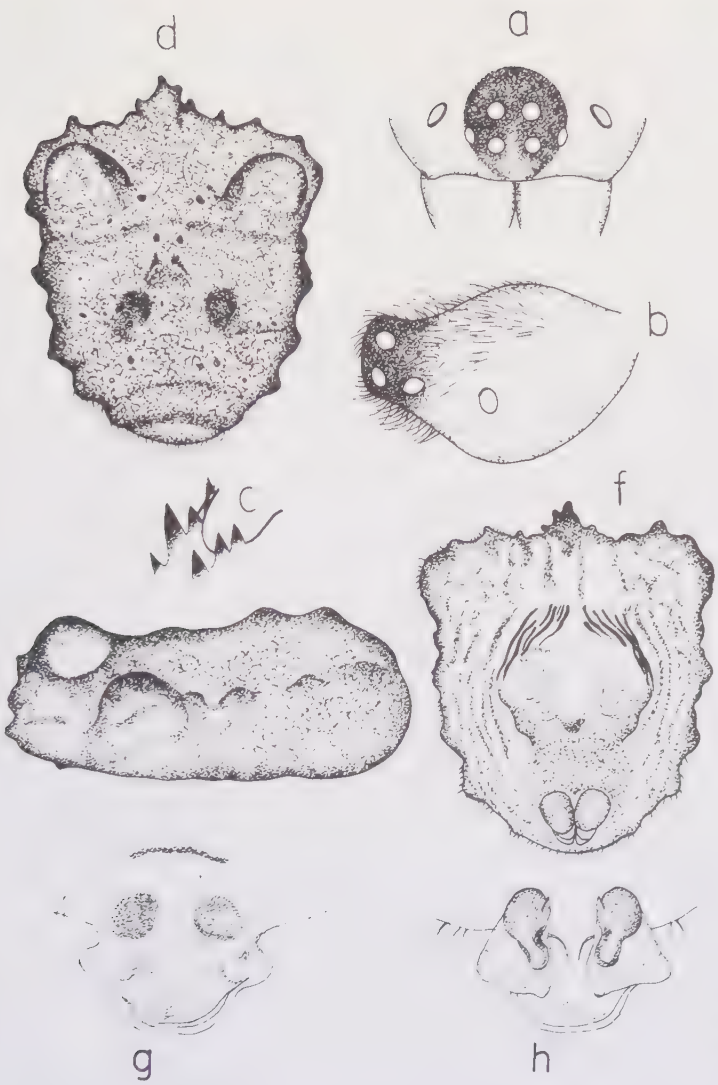


Fig. 359. Female *Poltys illepidus* C.L. Koch, frontal (a) and lateral (b) views of head; cheliceral teeth (c); dorsal (d), lateral (e), and ventral (f) views of abdomen; and dorsal (g) and ventral (h) views of epigynum.

Genus *Poltys* C.L. Koch

Poltys C.L. Koch, 1843. Die Arachniden 10: 97.
Pleuromma Doleschall, 1859. Act. Soc. Ind. Neerl. 5(5): 44.
Cyphagogus Gunther, 1862. Ann. Mag. Nat. Hist. 10(3): 1–2.
Mastigosoma Aussener, 1871. Verh. Zool. Bot. Ges. Wien. 21: 817.
Polyts Pocock, 1900. Fauna Brit. India Arachr.: 235.

Poltys C.L. Koch is an interesting orb-web spider, comprising some 40 species spread in the Oriental (19 species), Australian (12) and Ethiopian (nine) regions. The cephalothorax bears a prominent dorsally attenuate cephalic area and a frontally elevated projection. Median ocular quadrangle as long as wide or a little wider in front than behind. LE widely separated. PLE remote from the anterior one. Legs I and II long with flat, curved, and spinulose tibiae and metatarsi. Abdomen large, anteriorly elevated, and bears irregular tubercles.

Poltys illepidus C.L. Koch
(Figs 359a–h, 360a–f)

Poltys illepidus C.L. Koch, 1843. Die Arachniden 10: 1–142.

Redescription:
Female: Total length 14.44 mm. Cephalothorax 5.00 mm long, 3.60 mm wide, 3.60 mm high. Abdomen 9.44 mm long, 8.00 mm wide, 3.67 mm high: Cephalothorax with three elevations or raised areas in side view – eye area, posterior cephalic area, and mid-thoracic area – dorsally constricted behind ALE and

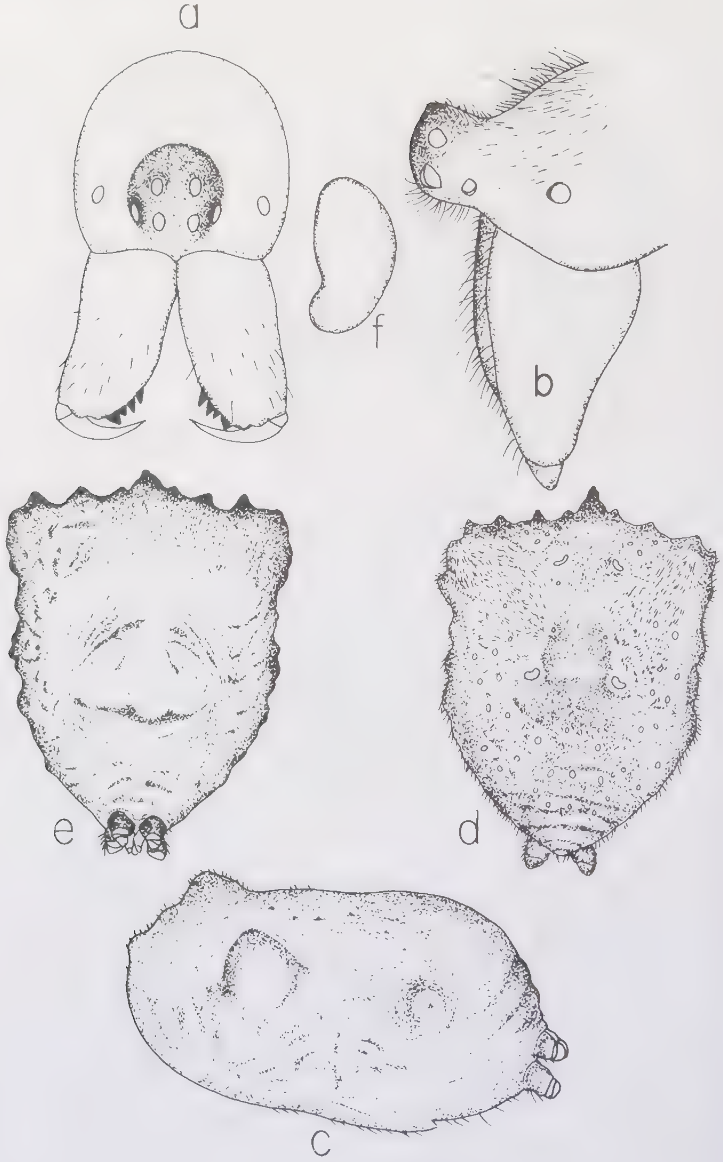


Fig. 360. Subadult female *Poltys illepidus* C.L. Koch, frontal (a) and side (b) views of head; lateral (c), dorsal (d), and ventral (e) views of abdomen; and sigilla (f).

posterior to cephalic area. Thoracic area moderately hump-like, separated by an arrow-like fovea. Eight eyes in two rows, PE more strongly recurved than AE. Eye diameter (mm): AME = PME = PLE = 0.16, ALE = 0.12, the smallest. Eye separation: AME–AME 1.6 times eye diameter and as long as ALE–PME, AME–ALE 1.13 times AME diameter, PME–PME 1.8 times eye diameter, PME–PLE 5.3 times eye diameter. Clypeus height 1.5 times AME diameter. Sternum longer than wide (55 : 42 mm), posterior end rounded, apical end strongly concave, with a yellowish patch basal of labium. Maxillae longer than wide, yellowish brown except yellow promarginal edge. Apical half of labium yellow and triangular. Chelicerae with distinct boss, promargin with four alternating short and long teeth, retromargin with only three teeth of uniform size. Legs brown, moderately hairy, and blackish at apex of leg segments, spines usually thin and moderately short. Leg formula 1243. Tarsus of pedipalp longest, 1.22 times longer that its femur.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.00	2.67	4.78	3.72	1.56	18.73
2	5.56	2.50	4.67	3.44	1.28	17.45
3	3.75	1.92	2.25	2.08	1.00	11.00
4	5.22	1.77	3.44	2.56	1.11	14.10
Pedipalp	1.55	0.83	1.11	–	1.89	5.38

Abdomen roughly brown, with scattered white and grayish brown flecks dorsally, anterior end with about eight pointed tubercles, shoulder distinctly ball-like and bulging, lateral margins with three or four tubercles, median area with a pair of large dark brown deep bands like sigilla, and with four or five dark brown transverse

bands posterior to the globular shoulder hump up to the posterior end. Epigynum almost at the middle of the abdomen with inverted U-shaped and black striated bands anterior to the epigynum. Scape broadly tongue-like with a flange anteriorly. Spermathecae knob-like in a subtriangular plate and separated by a notch.
Natural history: An adult female and subadult female (Fig. 360a–f) were collected inside dry brown rolled coffee *Coffea arabica* leaves in July, grown in between fields of dryland rice.
Material examined: PHILIPPINES: *Mindanao Is.*, Bukidnon Prov., Pangantukan, Pangantukan Vill., one female, 9 July 1979, A.T. Barrion; one subadult female, 9 July 1979, R. Labios.
Distribution: Japan, West New Guinea and the Philippines (new record).

Genus *Cyrtarachne* Thorell

Cyrtarachne Thorell, 1868. Eug. Resa Arachn.: 10.
Dema Karsch, 1878. Z. Ges. Natuurw 51: 801.
Cyrtarachne Simon, 1895. Hist. Nat. Araign. 1(4): 880.

Cyrtarachne Thorell is a coccinellid-like araneid with beautiful markings or sigillae on the strongly convex abdomen. The carapace is convex and simple, ocular quadrangle slightly wider than long, and contiguous LE subequal in size. Abdomen large, wider than long, and leathery.

It occurs in Asia, Africa, and Australia.

Cyrtarachne tuladepilachna new species
(Fig. 361a–e)

Description:
Female: Total length 6.23 mm. Cephalothorax 2.13 mm long, 2.35 mm wide, 1.30 mm high. Abdomen 4.10 mm long, 6.30 mm wide, 4.50 mm high. Cephalothorax yellow except thin brown eye rings, attenuate cephalic area and low eye areas, thoracic area widest dorsad of coxae III and IV and highly elevated dorsad of coxae I. Eight eyes in two recurved rows, all homogeneous and clear. AE slightly longer than PE. Eye diameter (mm): AME = PME = ALE = 0.13, PLE = 0.09. Eye separation: AME–AME = PME–PME 1.2 times AME diameter, AME–ALE 3.3 times AME diameter, PME–PLE almost four times AME diameter. Median ocular quadrangle subsquare, anterior and posterior widths equal and longer than length. Clypeus height 0.80 AME diameter. Sternum brown, with 10–11 longitudinal rows of dark brown to black hairs, five rows each side of the bald median area, provided with a small brown band, longer than wide, anterior margin strongly concave, posterior end subtruncate between coxae IV. Labium brown, except thin yellow and strongly convex distal margin, wider than long. Maxillae brown with pale yellow inner lateral margin and brownish scopulae subbasally and apically, outer lateral margins straight. Chelicerae yellow, small, and moderately robust, with a distinct boss and black hairs in the inner dorsal part prior to attenuation, promargin bears three teeth and retromargin with three teeth on the left and five teeth in the right chelicerae. Legs yellow brown, except black tarsi and apical three fourths of metatarsi, all segments hairy, without spines except two prolateral macrosetae in femora I and one prolateral in tibiae I. Tarsi three-clawed, each superior claw with three or four teeth and inferior claw with two teeth. Auxiliary foot claws black, similar to tarsal claws, strongly serrated ventrally and almost as long as main claws. Leg formula 1423. Pedipalp yellow, except black single-clawed tarsus, as long as combined length of tibia, metatarsus and tarsus of leg III.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.50	0.78	1.03	0.85	0.40	4.56
2	1.45	0.75	1.00	0.88	0.43	4.51
3	0.90	0.45	0.65	0.55	0.38	2.93
4	1.70	0.70	0.95	0.80	0.40	4.55
Pedipalp	0.40	0.30	0.38	–	0.50	1.58

Abdomen subglobular to transversely ovoid, strongly convex, orange-yellow with 16 black globular spots, three pairs in the dorsomedian arranged in two longitudinal rows (or three transverse rows) and ten submarginal spots circling the median spots, two subanterior pairs conjoined to the broad anteromarginal black band and the most posterior pair of the circular spots fused to the posterior third pair of the median spots. Venter with a broad black V-shaped lateral band with the spinnerets enclosed in its base, entire venter inside the band brownish. Epigynum with a short tongue-like to triangular scape, fertilization duct moderately long and parallel, directed towards the epigastric groove.
Etymology: A combination based on its resemblance ('tulad' in Tagalog) to a coccinellid beetle in the genus *Epilachna*.
Natural history: One female was collected by a D-Vac suction machine from upland rice in October.
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Pasto Vill., one female holotype, 1 October 1989, H. Justo.
Distribution: Philippines.

Genus *Parawixia* F.O. Pickard-Cambridge

Parawixia F.O. Pickard-Cambridge, 1904. Biologia Cent. Amer. (Zool.) 2: 487.

A widely distributed genus characterized primarily by the carapace with a granulate and swollen cephalic region posterior to the ocular area. AE row procurved when viewed frontally. Abdomen triangular with a pair

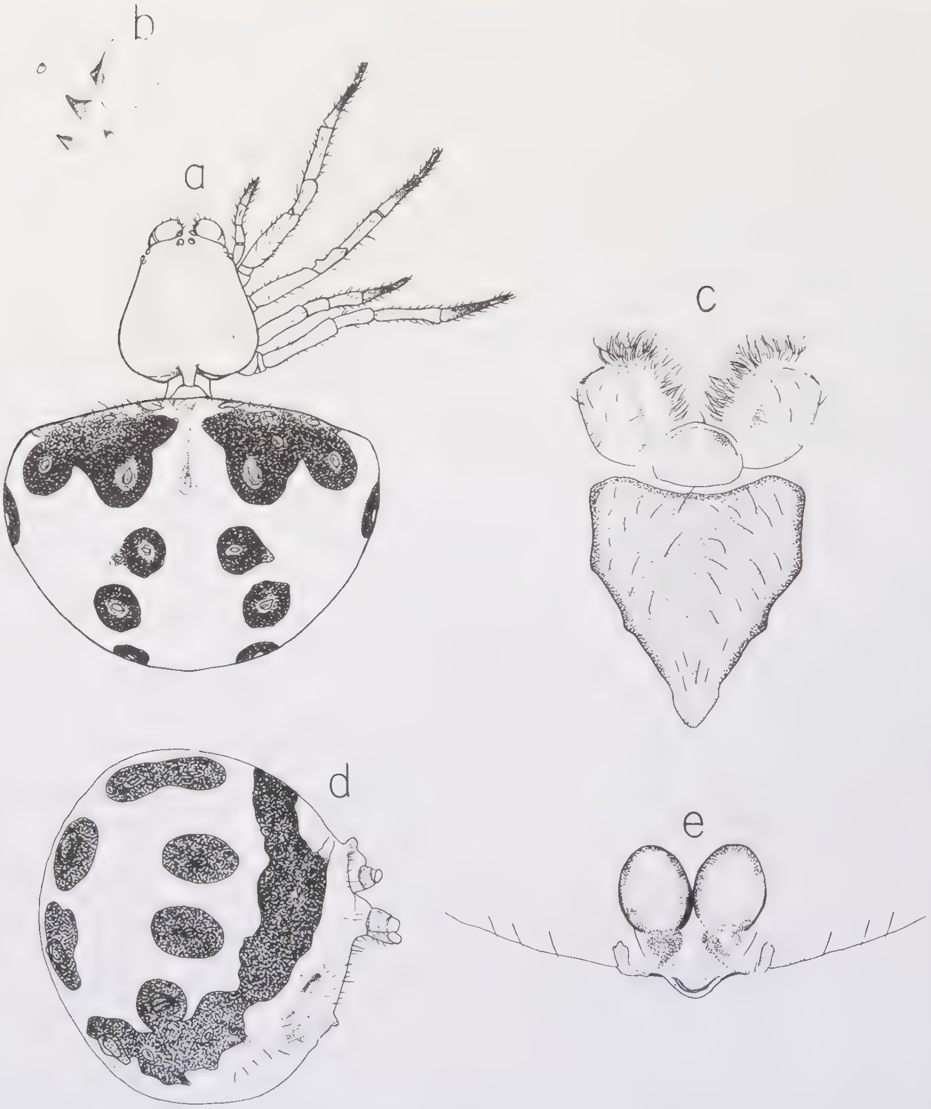


Fig. 361. Female *Cyrtarachne tuladepilachna* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); side view of abdomen (d); and epigynum (e).

of shoulder humps and a single posterior hump. Epigynum simple with a prominent beak-like scape borne on a swollen base.

Parawixia F.O. Pickard-Cambridge comprises only 11 species.

Paraxiwia dehaani (Doleschall)

(Fig. 362a–e)

Epeira dehaani Doleschall, 1859. Act. Soc. Ind. Neerl. 5(5): 33.
E. kandarensis Thorell, 1877. Annali. Mus. Civ. Genova 10: 372.
E. submucronata Simon, 1887. J. Asiat. Soc. Berg. 56(2): 106.
E. dehaani Thorell, 1895. Spiders of Burma: 150.
Araneus dehaani Simon, 1899. Annls. Soc. Ent. Belg. 43: 90.

Redescription:

Female: Total length 14.90 mm. Cephalothorax 5.70 mm long, 4.75 mm wide, 3.80 mm high. Abdomen 9.20 mm long, 7.60 mm wide, 4.90 mm high. Cephalothorax brown, with black eye margins and swollen bases of individual white hairs and with a pair of dark brown longitudinal striae posterior to PME running towards fovea. Cephalic slightly higher than thoracic area, with a yellow tubercle dorsad of LE. Eye diameter (mm): AME = 0.29, PLE = 0.18, ALE = 0.16, PME = 0.15. Eye separation (mm): AME–AME = 0.38, AME–ALE = 1.00, ALE–PLE = 0.10, PLE–PME = 1.20, PME–PME = 0.28. MOQ-AW 1.35 times wider than MOQ-PW, 1.13 times longer than length. Clypeus height one AME diameter or slightly longer. Sternum brown, with dark brown swollen bases of hairs and with seven tubercles almost opposite each coxae, longer than wide (2.50 : 2.40 mm). Labium yellow apically, brown in

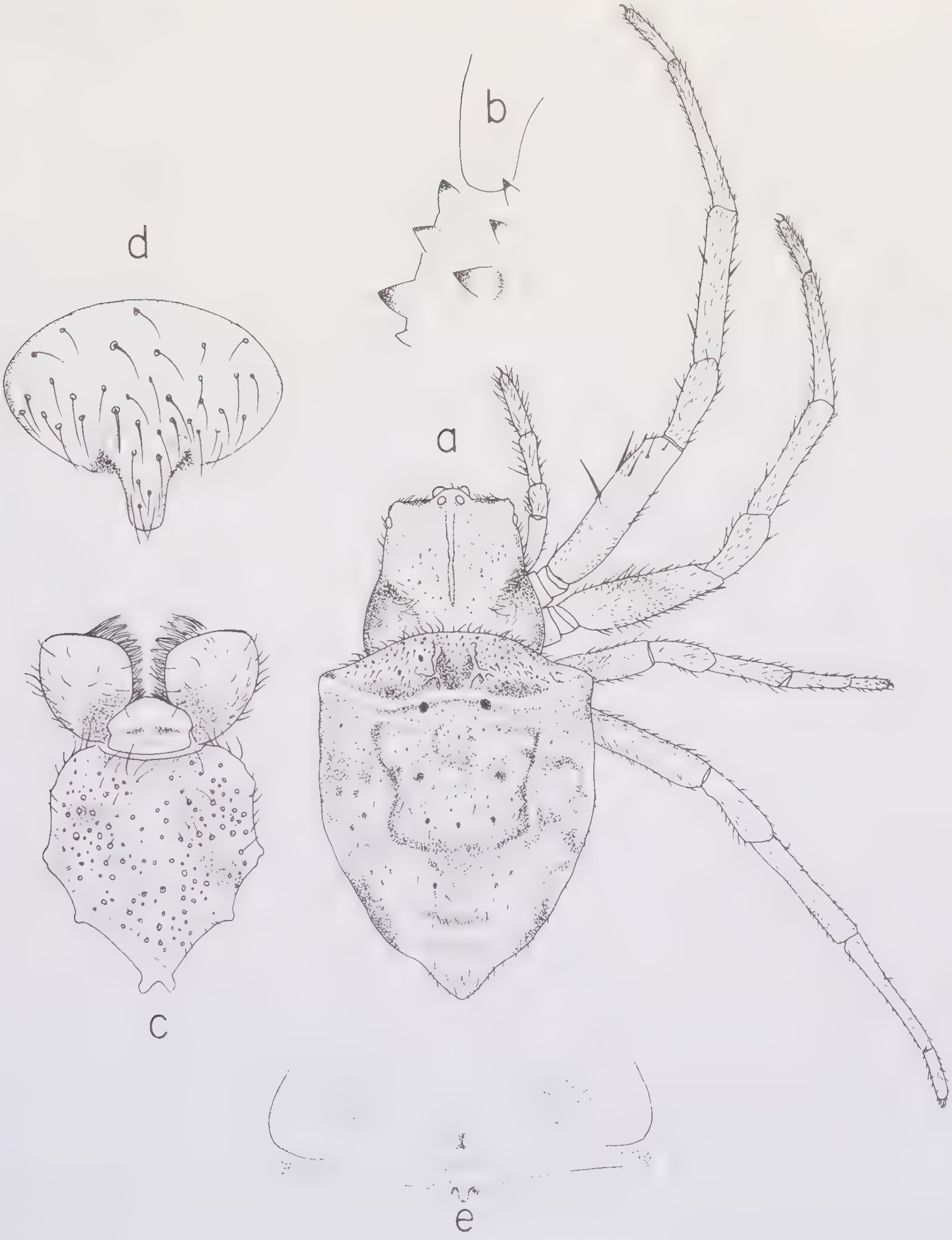


Fig. 362. Female *Parawixia dehaani* (Doleschall) (a); cheliceral teeth (b); sternum, labium, maxillae (c); epigynum (d); and scape (e).

basal two thirds, wider than long. Maxillae brown with yellow inner lateral margins. Chelicerae brown with four promarginal and three retromarginal teeth, base of each tooth slightly swollen. Legs yellowish brown, except slightly gray apices, with weak spines. Spination in femura I = 10-0-7-0, dorsal spines in two rows, tibia I = 2-11-3-4, and metatarsus I = 0-9-0-0. Metatarsus I/tarsus I = 2.48. Leg formula 4123. Pedipalp longer than any femur.

Abdomen triangular, brown, except white transverse band connecting shoulder humps, small white U-band midanteriorly and longitudinal dorsolateral band on each side of the dark brown median enclosing four large sigilla. Venter brown and clothed with short brown hairs. Epigynum bears a slender scape with a large base.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.90	2.50	4.10	3.60	1.45	16.55
2	4.70	2.70	3.85	3.30	1.40	15.95
3	3.40	1.50	2.20	2.00	1.00	10.10
4	5.00	2.40	4.00	4.00	1.40	16.80
Pedipalp	1.80	0.80	1.20	–	1.90	5.70

Natural history: The single specimen was collected by sweep net in upland rice in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna

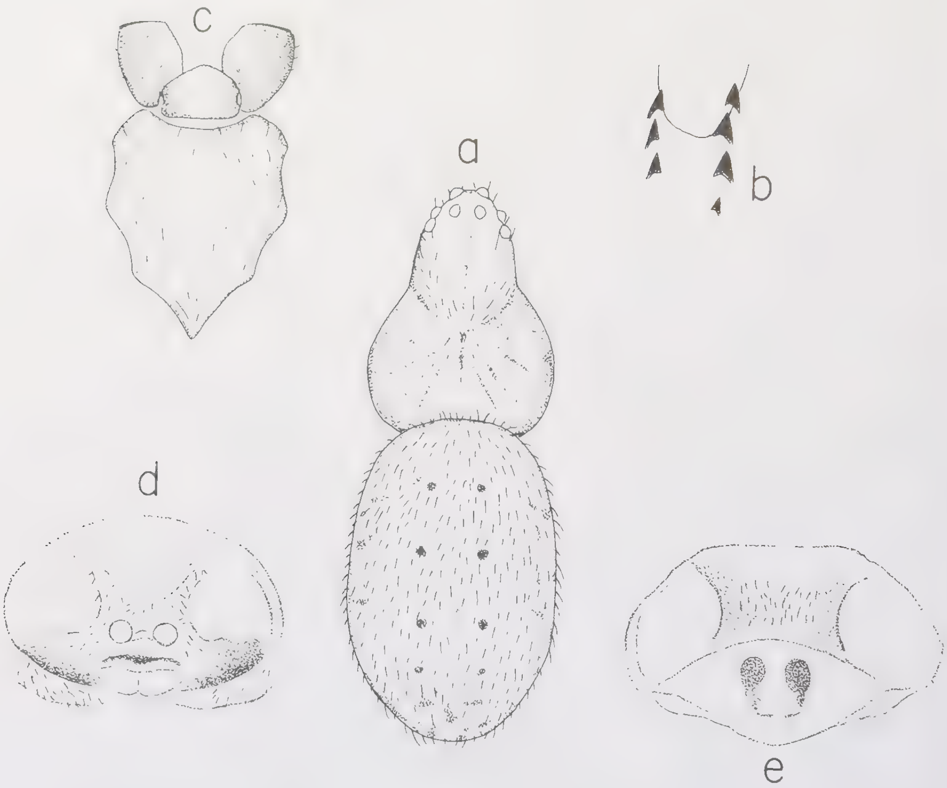


Fig. 363. Female *Acusilas dahoneus* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and dorsal (d) and ventral (e) views of epigynum.

Prov., Los Baños, Tuntungin Vill., one female, 10 August 1989, M. Perez.
Distribution: Philippines (new record), India, Burma, Indonesia and Japan.

Genus *Acusilas* Simon

Acusilas Simon, 1895. Hist. Nat. Araign. 1(4): 785.

Acusilas Simon belongs to the subfamily Araneinae in the group Cycloseae. It is a small orb-web genus comprising of five species distributed in the Oriental (three species) and Ethiopian (two species) regions.

Members of the genus are commonly inside dried rolled leaf attached to the web. They are characterized by the following characters: cephalic area higher than the thoracic area; both AE and PE rows recurved; chelicera with four promarginal and three retromarginal teeth; and abdomen longer than wide.

The genus is a new record for the Philippines.

Acusilas dahoneus new species
(Fig. 363a–e)

Description:
Female: Total length 6.22 mm. Cephalothorax 2.33 mm long, 1.89 mm wide, 1.39 mm high. Abdomen 3.89 mm long, 2.44 mm wide, 2.39 mm high. Cephalothorax uniformly brown except the black eye margins, cephalic area very distinct from the broad thoracic area. Fovea long and blackish at the junction of cephalic and thoracic area. Eight eyes in two recurved rows, all homogenous and crystal clear. Intereye spaces with hairs and with a strong seta posterior to PLE. Eye diameter (mm): AME–PME = 0.18, PLE = 0.14, ALE = 0.12. Eye separation: AME–AME one third shorter than one AME diameter, AME–ALE and PME–PME about one half AME diameter, PME–PLE as long as one ALE diameter. Clypeus height about as long as one half AME diameter. Sternum heart-shaped, brown except thin black margins, hairy with longer subapical hairs, extensions between coxae absent, apex concave to house labium. Maxillae and labium same color as sternum and legs. Labium a little wider than long and narrowed to triangular apically. Maxillae moderately or much longer than wide with short yellow scopulae. Chelicerae moderately small, boss well developed, promargin with four teeth and retromargin with only three teeth. Legs a little longer than total body length, clothed with moderately thin setae and spines. Femur I with four thin promarginal spines in the apical one third. Leg formula 1423. Pedipalp brown except yellow-brown femur. Tibia of pedipalp with a long trichobothrium at dorsal midhalf.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.03	0.89	1.78	1.50	0.72	6.92
2	1.89	1.00	1.39	1.22	0.61	6.11
3	1.28	0.67	0.83	0.72	0.55	4.05
4	1.94	1.00	1.50	1.27	0.61	6.32
Pedipalp	0.78	0.39	0.50	–	0.83	2.50

Abdomen oblong, uniformly brown with yellow brown hairs and four pairs of dorsal sigilla. Lateral and posterior margins with dark brown flecks. Venter brown with yellow tinges, grayish at both lateral ends of epigynum. Colulus present and triangular. Cribellum just anterior to colulus. Basal segment of anterior spinnerets ca. as long as wide. Posterior spinnerets smaller than the anterior pair. Epigynum double-lip-like, anterior lip brown and bulging medially towards the yellow and slightly procurved posterior lip. Spermathecae globular with U-shaped fertilization tubercle in lateral view.

Etymology: The species name 'dahon' plus eus is a word coined from its habitat, a rolled dry leaf ('dahon' in Tagalog).

Natural history: Three females were separately collected from dry rolled leaf of *Bambusa* sp., drooping to rainfed lowland rice in September. In addition, two females were isolated from the D-Vac suction collections made in the *Imperata cylindrica* grassland on the same sampling date.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, Bangag Vill., holotype female, 21 September 1981, A.T. Barrion; four female paratypes, same data as holotype.

Distribution: Philippines.

Genus *Cyrtophora* Simon

Cyrtophora Simon, 1864. Hist. Nat. Araign. 1: 261.
Euetria Thorell, 1890. Annali. Mus. Civ. Genova 28: 109.
Hentzia Mac Cook, 1893. Amer. Spid. 3: 244.
Cyrtophora Gravely, 1921. Rec. Indian Mus. 22(4): 413.

Members of the genus have cephalothorax almost flat dorsally and a long cephalic area. Median ocular quadrangle slightly longer than wide, lateral eyes equal and slightly separated from each other. Legs moderately long and stout. Abdomen with paired tubercles along the very high anterior end.

Cyrtophora exanthematica (Doleschall)
(Fig. 364a–g)

Epeira exanthematica Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 38.
Araneus exanthematica Pocock, 1900. Faun. Brit. Ind. Arachn.: 227.

Redescription:
Female: Total length 8.92 mm. Cephalothorax 3.75 mm long, 2.83 mm wide, 2.00 mm high. Abdomen 5.17 mm long, 3.92 mm wide, 2.50 mm high. Cephalothorax yellow-brown, clothed with white hairs, and eye rims yellow. Eight eyes in two recurved rows with long hairs on the inner margins of LE and posterior to PLE. Eye diameter (mm): AME = 0.16, PME = 0.14, ALE = PLE = 0.12. Eye separation: AME–AME 1.8 times eye diameter, AME–ALE 1.25 times AME diameter, PME–PME 1.14 times PME diameter, PME–PLE 3.7 times PLE or 2.75 times AME diameter. Clypeus height 0.8 AME diameter. Sternum a little longer than wide, brown with yellow submarginal spots opposite coxae I to III and in between coxae IV. Labium wider than long, posterior two thirds brown and the tapering apical one third yellow. Maxillae longer than wide, brown except yellow retromargin. Chelicerae moderate size, yellow with reddish brown fang, promargin with four teeth and retromargin with three teeth. Legs yellow, brownish in the tarsi. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.83	1.50	2.67	2.08	1.08	10.16
2	2.92	1.42	2.00	1.92	0.92	9.18
3	2.00	1.04	1.25	1.08	0.75	6.12
4	2.67	1.50	2.00	1.92	0.88	8.97
Pedipalp	1.00	0.58	0.67	–	1.20	3.45

Abdomen pinkish brown, longer than wide and subrectangular, apex with small tubercles and hump on shoulders, median with four pairs of sigilla in two longitudinal rows, lateral margins each with a longitudinal chalk-white stripe, posterior end slightly corrugated and blunt. Venter of abdomen brown with yellow book lungs, chalk-white rim on spinnerets, and dark brown spinnerets. Epigynum with a short triangular scape, lateral lobes wide with each lobe bisected by the fertilization tube, spermathecae globular and slightly diverging anteriorly.

Natural history: A female was collected from the orb-web in between two broad leaves of a 4-meter-high *Sandoricum coejapi* near upland rice. The web is characterized by square meshes and horizontal dome-shaped webs with barriers anteriorly and posteriorly, the web has no viscid silk typical in most araneids. The female sits on her egg cocoon to guard the hatching of the eggs. The second female was handpicked from rice panicle in September.

Material examined: PHILIPPINES: *Luzon Is.*, Lipa City, Marauoy Vill., one female, 10 May 1989, A.T. Barrion; Tanauan, Sala Vill., one female, 3 September 1977, O. Serrano.

Distribution: Japan, Philippines, Singapore, Indonesia, Burma, Papua New Guinea and Northern Australia.

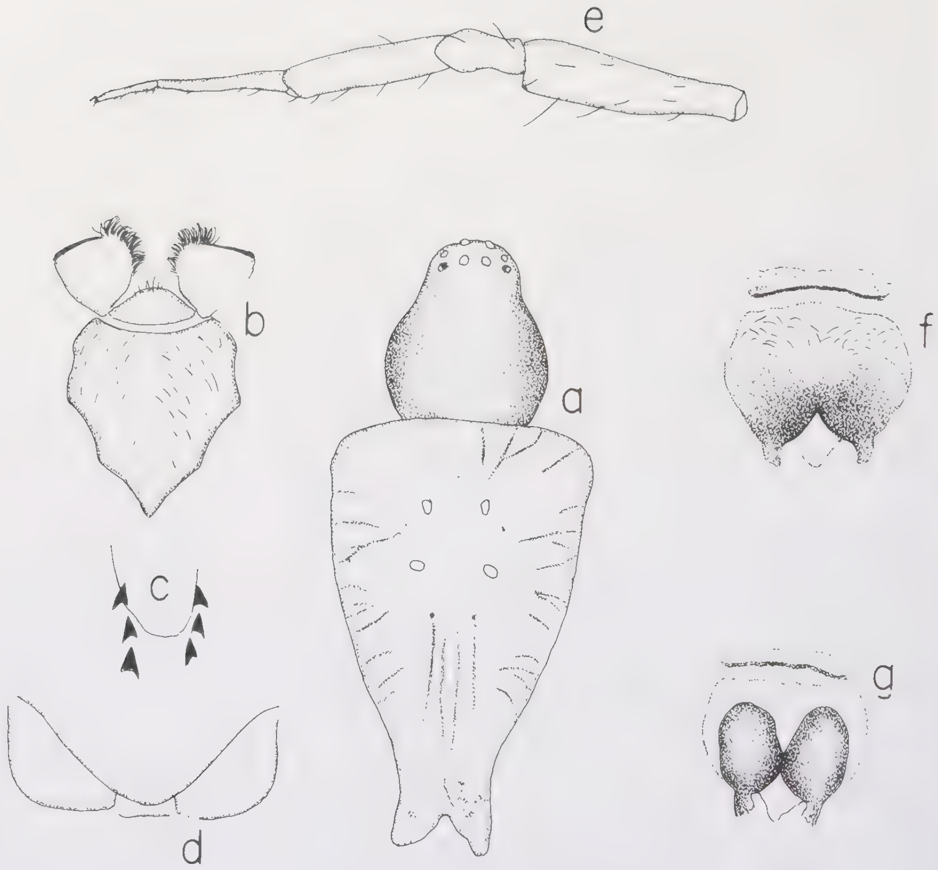


Fig. 364. Female *Cyrtophora exanthematica* (Doleschall) (a); sternum, labium, and maxillae (b); cheliceral teeth (c); book lungs (d); leg I (e); and dorsal (f) and ventral (g) views of epigynum.

Cyrtophora parangexanthematica new species
(Fig. 365a–g)

Description:
Female: Total length 8.80 mm. Cephalothorax 3.60 mm long, 2.60 mm wide, 1.60 mm high. Abdomen 5.20 mm long, 3.70 mm wide, 1.40 mm high. Cephalothorax dull yellowish brown, cephalic area slightly convex and higher than thoracic area. Very similar to *C. exanthematica*. Both eye rows recurved, with black posterior of PE row. Eye diameter (mm): AME = 0.18; ALE = PME = 0.13, PLE = 0.11. Eye separation (mm): AME–AME = 0.20, AME–ALE = 0.25, PME–PME = 0.14, PME–PLE = 0.45. MOQ wider in front than behind. Clypeus height 0.13 mm, about 0.7 AME diameter. Sternum yellow brown with small humps opposite each coxa. Labium yellow anteriorly and reddish brown basally. Maxillae yellow on the inner one third. Chelicerae with four promarginal and three retromarginal teeth. Basal tooth of retromargin with a small spine at base. Subapical tooth of promargin the smallest. Legs yellow without bands, bear slender spines. Midprolateral of femur I with three spines in a triangular form. Tibiae I and II with five pairs of ventral spines. Metatarsi I and II with seven (2-1-2-2) ventral spines. Metatarsus I/tarsus I = 2.60. Leg formula 1243. Pedipalp's tarsus longer than femur.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.75	1.45	2.20	1.80	0.80	9.00
2	2.80	1.40	2.00	1.85	0.90	8.95
3	1.80	1.00	1.10	1.10	0.80	5.80
4	2.60	1.10	1.60	1.70	0.70	7.70
Pedipalp	1.10	0.50	0.65	–	1.20	3.45

Abdomen yellow with a median black triangular spot and four pairs of brown spots, anterior margin rough and subposterior end with two or three transverse ridges. Shoulder hump distinct and with a white longitudinal line running down to posterior end. Posterior tip slightly cleft. Venter with whitish spots, white ring circling the spinnerets. Epigynum simple and bears a V-shaped or tongue-like process, spermathecae globular and diverge apically.

Etymology: Named after its close similarity to *C. exanthematica.*

Natural history: The single female was collected by D-Vac machine from a drained ricefield in January.

Material examined: PHILIPPINES: *Panay Is.*, Iloilo

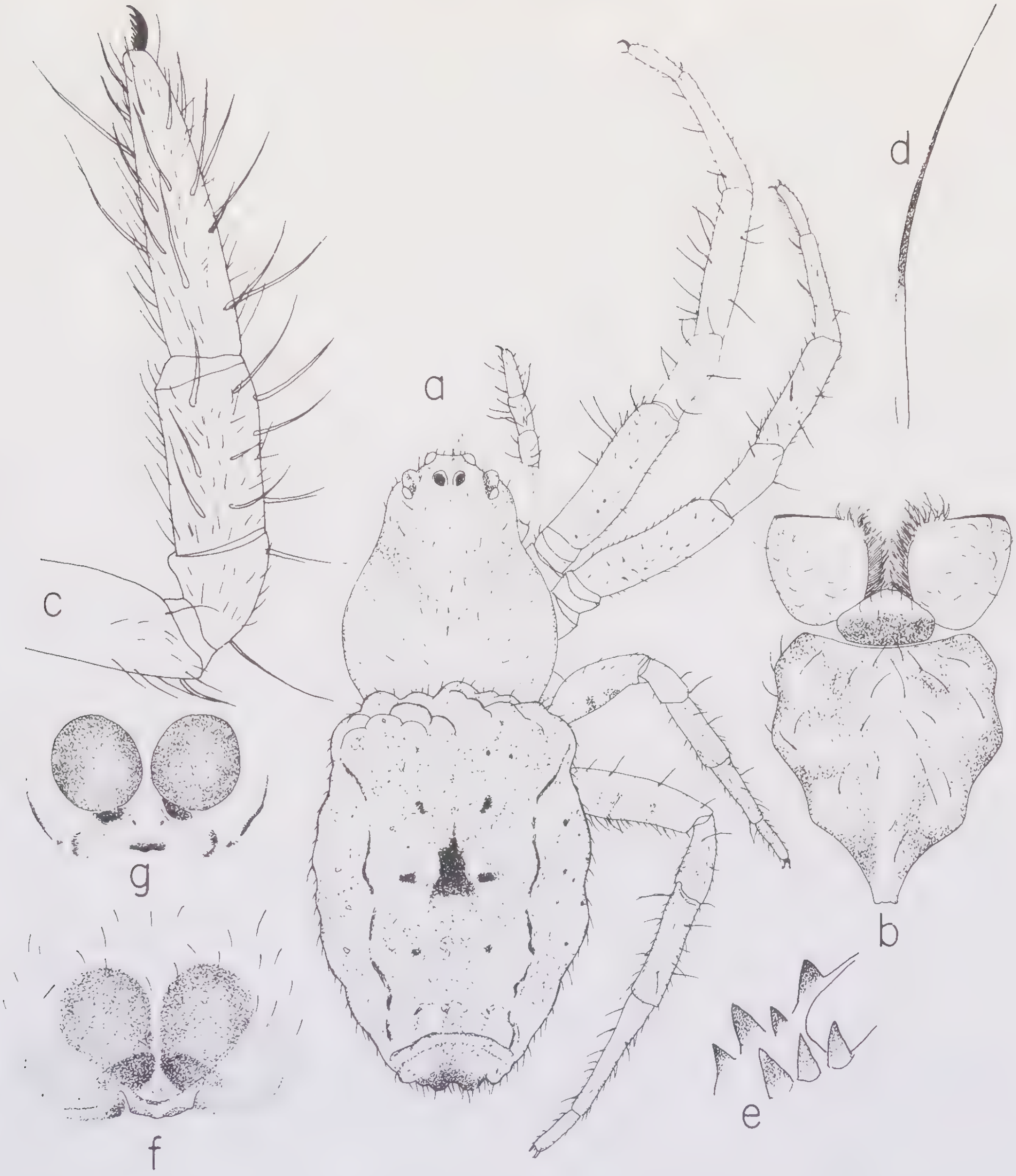


Fig. 365. Female *Cyrtophora parangexanthematica* n. sp. (a); sternum, labium, and maxillae (b); pedipalp (c); patella seta (d); cheliceral teeth (e); and dorsal (f) and ventral (g) views of epigynum.

Prov., Oton, holotype female, 7 January 1978, M. Lumaban.
Distribution: Philippines.

Cyrtophora unicolor (Doleschall)
(Fig. 366a–j)

Epeira unicolor Doleschall, 1859. Acta. Soc. Ind-Neerl. 5: 419.

Redescription:
Female: Total length 25.00 mm. Cephalothorax 9.50 mm long, 6.33 mm wide, 4.67 mm high. Abdomen 15.50 mm long, 15.33 mm wide, 10.00 mm high. Cephalothorax brownish red, clothed dorsally with many peg-like spines extended to the lateral margins. Cephalic area narrower than the thoracic area, slight bulge behind LE, anterior eyes on a tubercle and more pronounced in the ALE, AME separated from ALE with a deep notch. Thoracic area with fewer peg-like spines

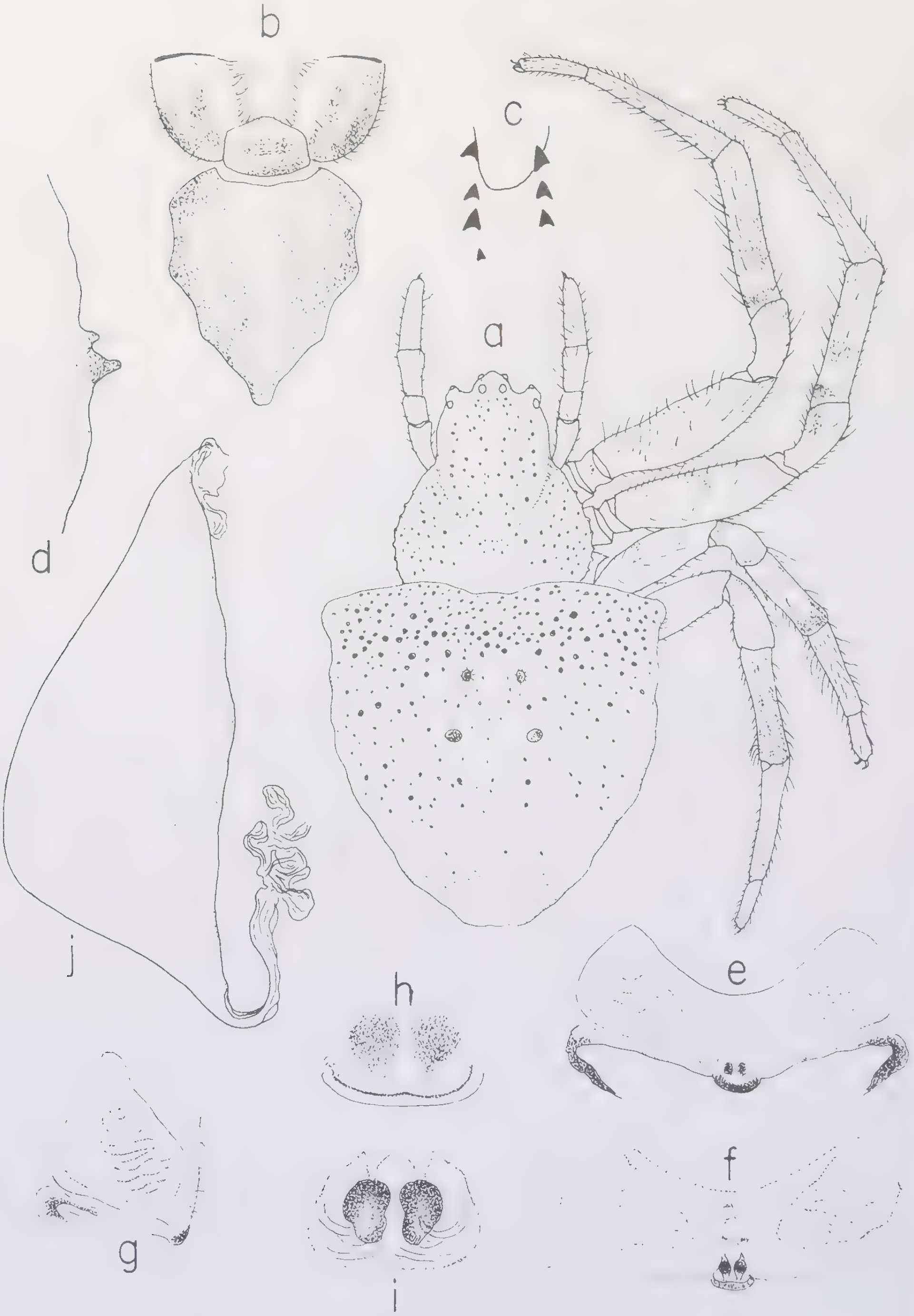


Fig. 366. Female *Cyrtophora unicolor* (Doleschall) (a); sternum, labium, and maxillae (b); cheliceral teeth (c); uncleared side (d), dorsal (e), and ventral (f) views of epigynum; lateral view of book lung (g); cleared dorsal (h) and ventral (i) views of epigynum; and egg cocoon (j).

posteriorly. Eight eyes in two recurved rows, AE slightly shorter than PE (2.84 : 3.00 mm). Eye diameter (mm): AME = PME = PLE = 0.24, ALE = 0.16. Eye separation: AME–AME twice eye diameter, AME–ALE three times AME diameter. Clypeus height twice AME diameter. Sternum brown, with dark brown margins, light yellow median longitudinal band, and a yellow tubercle with a long hair in its center opposite each coxa, anterior end narrowly concave, and the posterior end notched. Labium wider than long, brown red with a yellow apical margin. Maxillae same color as labium, longer than wide, promargin yellow. Chelicerae uniformly brown except blackish brown fang, promargin with three teeth and retromargin with four teeth. Legs hairy, same color as cephalothorax except for light yellow-brown bands in the tibiae, femora rough with thin long spines borne on pegs, tarsi with three equally long claws. Leg formula 1243.

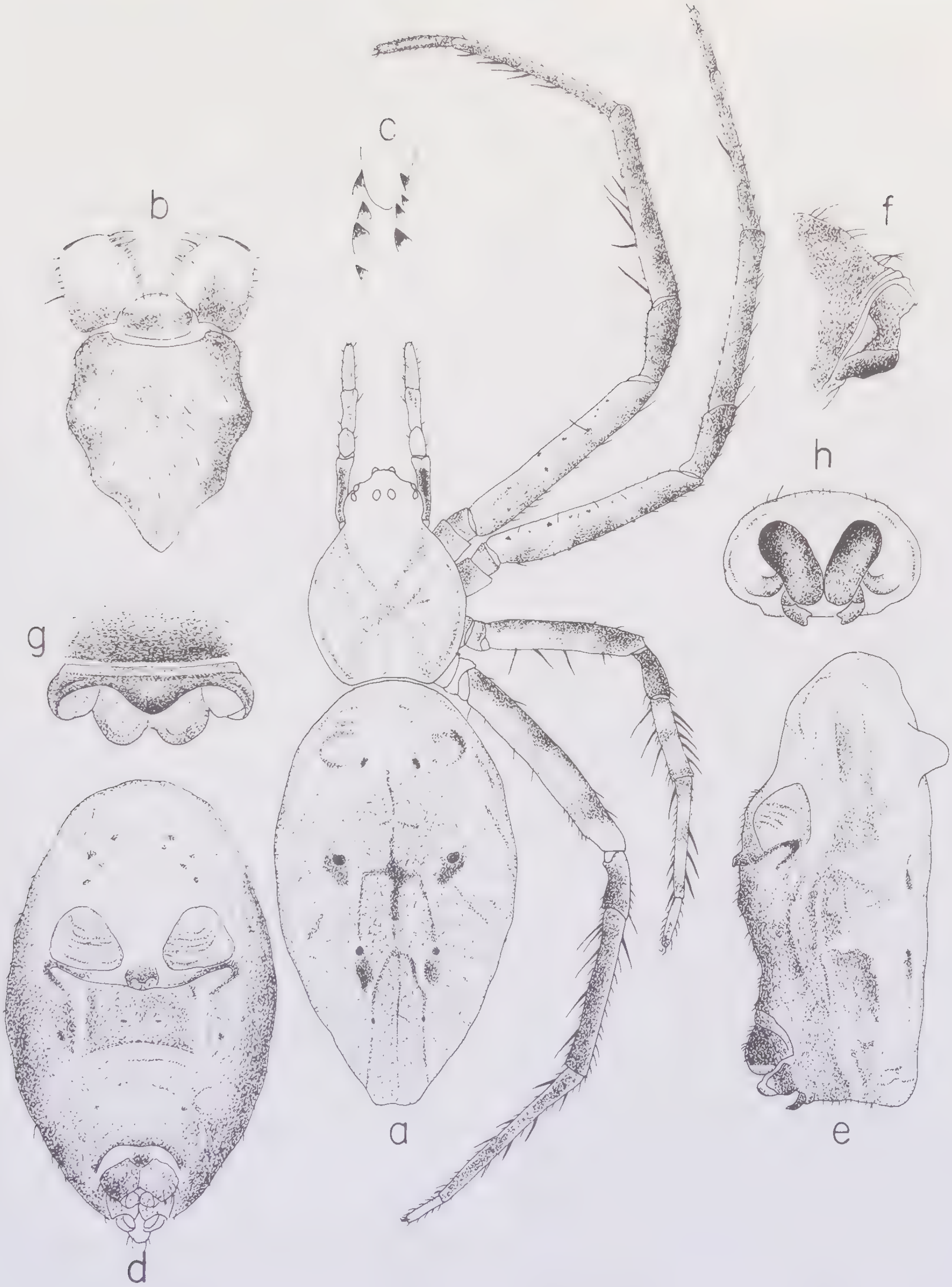


Fig. 367. Female *Cyrtophora koronadalensis* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); ventral (d) and lateral (e) views of abdomen; and lateral (f), dorsal (g), and ventral (h) views of epigynum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	7.83	3.20	6.20	6.00	2.00	25.23
2	7.50	3.17	5.83	5.67	2.17	24.34
3	5.33	2.33	3.33	3.00	1.66	15.65
4	7.00	3.33	4.67	5.17	1.83	22.00
Pedipalp	2.67	1.33	1.67	–	2.75	8.42

Abdomen same color as cephalothorax and legs, triangular to subtriangular, with unpaired globular humps throughout the dorsum, median area with a pair of spherical sigilla, anterior part more rough than the posterior and with bigger unpaired globular humps. Spinnerets moderately short, anterior pair parallel to each other, posterior pair diverging and its dorsal part entirely covered with spine-like outgrowths.

Epigastric plate very prominent, subtriangular, with about ten transverse striae. Epigynum with a very small recurved posterior plate dorsally, anterior area dorsal of kidney-shaped spermathecae with two clefts producing three regions of the anterior.

Natural history: Adult specimens (two females) were collected at ground level, hiding in dried rolled foliage of 'kakawate' *Gliricidia*, used as mulch in upland rice in June. One female has pinkish brown egg cocoon wrapped in dried leaves, it measures 42 mm long, 22 mm wide, 17 mm high, flat ventrally and mound-like dorsally. Immatures were collected from upland rice.

Material examined: PHILIPPINES: *Leyte Is.*, Leyte Prov., Baybay, Visca Vill., holotype female, two female paratypes (drawn), and four immatures, 18 July 1985, A.T. Barrion.

Distribution: Philippines (new record), Singapore, Indonesia, Sri Lanka, Papua New Guinea, Northern Australia and Japan.

Cyrtophora koronadalensis new species

(Fig. 367a–h)

Description:

Female: Total length 21.00 mm. Cephalothorax 7.33 mm long, 5.33 mm wide, 3.67 mm high. Abdomen 13.67 mm long, 8.17 mm wide, 5.83 mm high. Cephalothorax pale yellow-brown, yellow in the basal one fifth, with black eye margins and white hairs in the lateral margins, anterior of fovea, intereye spaces, and middle of cephalic area. Eight eyes in two rows, AE strongly recurved and PE almost straight. Eye diameter (mm): AME = 0.24, PME = PLE = 0.20, ALE = 0.16. Eye separation: AME–AME as long as one AME diameter. AME–ALE 2.3 times AME diameter, PME–PME 1.4 eye diameter, PME–PLE three times PME diameter. Clypeus height as long as one PME or 0.8 AME diameter. Sternum black with a broad median chalk-white longitudinal band and pale yellow globular spots opposite coxal separations, longer (3.17 mm) than wide (2.80 mm). Labium black except yellow apical one fourth. Maxillae slightly longer than wide, black except yellow subglobular retromarginals. Chelicerae moderately small but robust, boss well developed, four promarginal teeth stronger than the four retromarginal teeth. Legs black, except yellow bands in the venter of femora, long and slender without stout spines. Pedipalp's length a little longer than tibia I, coloration similar to the legs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	9.08	3.33	7.67	8.33	2.16	30.57
2	8.50	2.50	6.75	7.17	2.42	27.34
3	5.67	1.83	3.33	4.33	1.50	16.66
4	8.33	2.83	5.83	6.83	1.67	25.49
Pedipalp	2.42	1.00	1.58	–	2.83	7.83

Abdomen yellow-green to green, longer than wide, oblongate with a pair of distinct tubercles subapically and three pairs of sigilla, smallest pair in between tubercles, largest pair in the middle and the medium-sized pair posterior to the largest pair. Laterals black except for one or two thin chalk-white lateral bands. Venter black including book lungs, with two interrupted chalk-white longitudinal lateral bands and two pairs of subglobular chalk-white bands in the middle between epigynum and spinnerets, and a transverse procurved white band anterior to the spinnerets. Epigynum with a short triangular tongue-like septum, depression distinct and lobe-like on each side of septum, anterior bulge dorsal of rim with three or four pairs of alternating transverse brown and yellow thin bands. Spermathecae bean- or kidney-shaped, nearly touching each other posteriorly.

Etymology: The epithet was named after the type locality.

Natural history: All three females were collected from a mango tree, *Mangifera indica*, in a ricefield in June.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato, Koronadal, Barangay Uno Vill., holotype female, 23 June 1985, A.T. Barrion; two female paratypes, same data as holotype.

Distribution: Philippines.

Genus *Cyclosa* Menge

Cyclosa Menge, 1866. Schrift. Nat. Ges. Danzing (N.F.) 1: 73.

Parazygia Caporiacco, 1955. Acta Biol. Venez. 1: 345.

Cyclosa Yaginuma, 1960. Spiders of Japan in Color: 67.

Members of the genus *Cyclosa* Menge have cephalothorax with an anteriorly narrow cephalic area markedly separated from the thoracic area by an oblique groove forming a U-shape. Median ocular quadrangle trapezium-like, distinctly narrower behind than in front. AME usually larger than PME. PME very close and almost touching each other. LE situated in a prominent tubercle and very close to each other. AE and PE recurved. Patella of male's pedipalp with one large

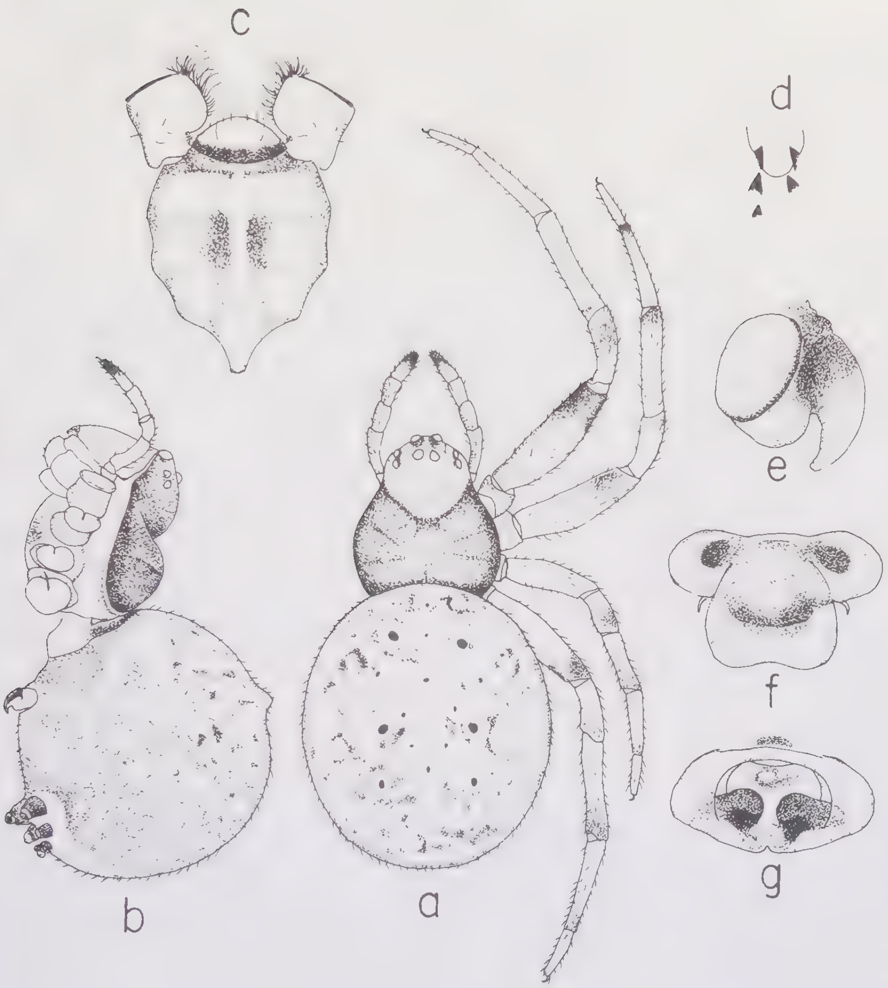


Fig. 368. Female *Cyclosa ipilea* n. sp., dorsal (a) and lateral (b) views; sternum, labium, and maxillae (c); cheliceral teeth (d); and lateral (e); and dorsal (f) and ventral (g) views of epigynum.

strong and curved spine. Abdomen elongate to subglobular with humps, usually paired except in the median. Epigynum small, scape weak and variable in shape – straight, bent, wrinkle, pointed, or circular.

Cyclosa ipilea new species
(Fig. 368a–g)

Description:
Female: Total length 5.15 mm. Cephalothorax 1.75 mm long, 1.54 mm wide, 1.28 mm high. Abdomen 3.4 mm long, 2.88 mm wide, 3.08 mm high. Cephalothorax chocolate-brown with yellow-brown cephalic area, black eye margins and inner portion of median ocular quadrangle. Cephalic region distinctly separated by a groove from thorax, occupies one half length of carapace, median cephalic groove black above an elevated circular-like fovea with a black longitudinal line running posterior to thorax. Six striae run towards fovea. Thorax and head subequally elevated. Eight eyes in two strongly recurved rows, PE longer than AE (0.78 : 0.68 mm). Eye diameter (mm): AME = 0.14, PME = 0.10, ALE = 0.08, PLE = 0.07. AME separation about one half eye diameter. AME–ALE separation 2.25 times ALE diameter. PME separation one sixth length of PME. PME–PLE separation three times ALE diameter. Median ocular quadrangle wider in front than behind, with one long hair each between PME and PLE. Clypeus height one seventh AME diameter. Sternum heart-shaped with a white T-band medially and a globular spot opposite each of coxae II and III, as long as broad (0.84 : 0.84 mm), indented opposite coxae II–IV, distal end straight and proximal tip pointed. Labium wider than long, apical one half yellow with a recurved top, a pair of short brown hairs on distal median and another pair of widely separated brown hairs between the border of yellow and reddish brown basal. Maxilla vertical, yellow brown with reddish brown serrula, elevated yellow inner portion opposite scopulae and steeply sloping outer half with five or six long brown hairs. Chelicerae vertical, boss prominent with a long ridge extended to midlength of chelicera, promarginal with three and retromarginal with two

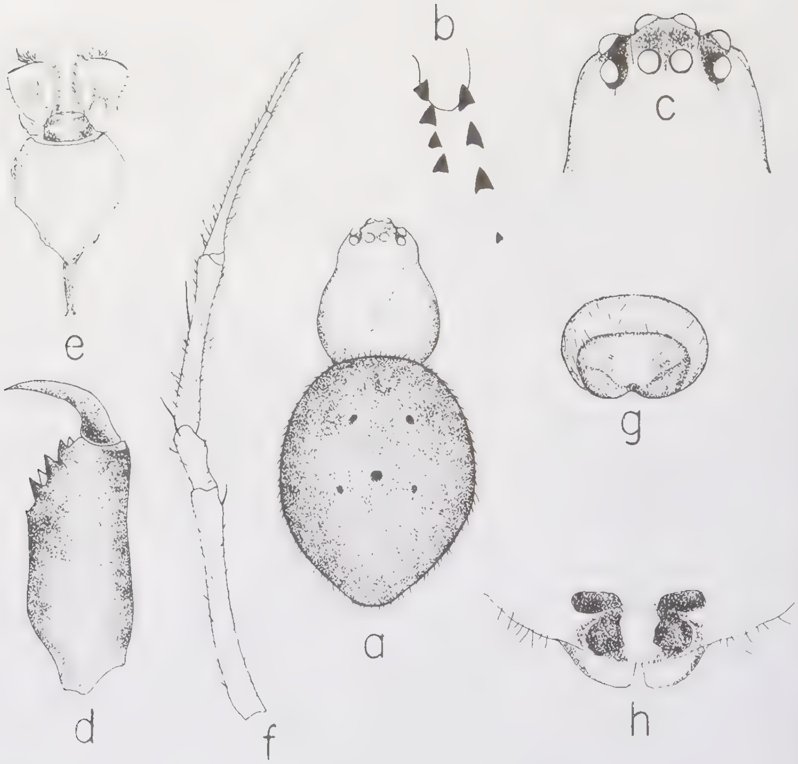


Fig. 369. Female *Cyclosa banawensis* n. sp. (a); cheliceral teeth (b); eye pattern (c); chelicera (d); sternum, labium, and maxillae (e); leg I without femur (f); and dorsal (g) and ventral (h) views of epigynum.

teeth. Legs yellow with grayish brown to black bands on distal and proximal apices of all leg segments except femur III and base of femur IV, metatarsus banded in the midhalf except in leg III, tarsus three-clawed with teeth in each superior claw. Leg formula 1243. Pedipalp yellow with apical two thirds of tarsus dark brown. Tarsus single-clawed.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.68	0.80	1.28	1.16	0.60	5.52
2	1.56	0.76	1.02	1.00	0.60	4.94
3	1.08	0.54	0.64	0.64	0.48	3.38
4	1.74	0.68	1.00	0.96	0.48	4.86
Pedipalp	0.56	0.30	0.34	–	0.64	1.84

Abdomen chalk-white mottled throughout with irregular marks, globular with a pair of small tubercles on the dorsoapical one third, three pairs of relatively large median brown and spherical sigilla – one pair just above tubercle and two pairs posterior to the tubercle – and five pairs of small sigilla arranged in a Christmas tree-like structure (if points were connected) medially. Venter chalk-white, grayish above spinnerets, and yellow along area of epigynum. Spinnerets with segments blackish brown basally and yellow distally, spinnerets distinctly separated from one another. Epigynum oblong and yellow except black base of scape, apex of broad and inwardly curved scape prominently indented, lateral margins well developed.

Etymology: Named after the common name of the host plant, ipil.

Natural history: Collected from the center of its 15.3 cm-long web made on top of a new growth of *Leucaena leucocephala*, heavily infested with psyllid *Heteropsylla cubana*, in late June. Undoubtedly, a predator of the psyllid. The web contained some 200 adults of *H. cubana*.

Material examined: PHILIPPINES: *Cebu Is.*, Cebu Prov., Bogo, holotype female, 24 June 1984, A.T. Barrion.

Distribution: Philippines.

Cyclosa banawensis new species
(Fig. 369a–h)

Description:

Female: Total length 7.56 mm. Carapace 3 mm long, 2.24 mm wide, 1.20 mm high. Abdomen 4.56 mm long, 3.80 mm wide, 3.40 mm high. Cephalothorax dark brown with black eye rims and ocular area, cephalic area with a U-shaped junction with thorax, fovea rather broad and deep with side arms, cephalothorax broadest above coxae II and III. Eight eyes in two recurved rows, AE more strongly recurved than PE, PE longer than AE (1.06 : 1.24 mm). Eye diameter (mm): AME = PME = PLE = 0.20, ALE = 0.18. Eye separation: AME one half eye diameter, AME–ALE one ALE diameter, PME and PME–PLE one half eye diameter. Median ocular quadrangle wider in front than behind (0.50 : 0.48 mm). LE and AME on a tubercle, LE somewhat contiguous dorsally but separated by 0.44 ALE diameter. Clypeus height 0.40 AME diameter. Sternum reddish brown, longer than broad (1.44 : 1.00 mm), margins straight except opposite coxae III and partly IV, posterior end narrowed and extended beyond coxa IV, distal end partially concave with tubercles on lateral ends. Labium reddish brown with yellow apical one fourth, wider than long (0.56 : 0.32 mm), broadest basally and transversely grooved medially, distal end straight. Maxilla reddish brown except yellow brown scopulae, longer than broad, narrowed basally and broadest apically. Serrula prominent in the distal end of maxilla. Chelicera with a developed boss, promargin and retromargin with four teeth each. Legs moderately long and hairy, dark brown, spination in femora I =2-0-4-3, II = 3-0-2-2, III = 1-0-0-0, IV = 2-0-1-1; tibiae I = 2-0-3-3, II = 1-0-2-2, III = 1-0-1-0, IV = 1-0-1-1; metatarsi I and II = 0-0-1-1, III = 1-0-2-1, IV = 0-0-0-0. Tarsus three-clawed and with accessory claws. Leg formula 1243. Pedipalp single-clawed.

Length of leg segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.68	1.28	3.40	3.28	1.36	13.00
2	3.20	1.16	2.72	2.72	1.12	10.92
3	1.80	0.72	1.32	1.36	0.80	6.00
4	3.00	0.84	2.32	2.36	0.92	9.44

Abdomen ovoid to globular, dark yellow-brown, with five dorsomedian spots and two more below the posterior hump, anterior partially overhangs thorax, proximal and concave as viewed laterally, venter blackish gray with a pair of white spots midway between anterior spinnerets and epigynum. Epigynum an ovoid plate with a highly sclerotized anterior margin, hirsute above anterior margin, light to transparent median plate not reaching tip of lateral margin, posterior margin cleft medially, spermathecae inverted L-shaped opposing each other.

Etymology: Named after type locality.

Natural history: A single female collected through D-Vac suction in March from a weedy portion of a field being harrowed.

Material examined: PHILIPPINES: *Luzon Is.*, Mt. Province, Banawe, holotype female, 28 March 1979, A.T. Barrion.

Distribution: Philippines.

Cyclosa mulmeinensis (Thorell)

(Figs 370a–g, 371a–e)

Epeira mulmeinensis Thorell, 1887. Ann. Mus. Civ. Stor. Nat. Genova 25: 221.

Cyclosa mulmeinensis Simon, 1908. Bull. Sci. Fr. Belg. 42: 104.

Argyrodes longispinus Saito, 1933. Trans. Sapparo Nat. Hist. Soc. 13: 45.

Redescription:

Female: Total length 4.16 mm long. Cephalothorax 1.72 mm long, 1.38 mm wide, 1.04 mm high. Abdomen 2.44 mm long, 1.83 mm wide, 1.77 mm high. Cephalothorax grayish brown, black along eye surrounds and grayish black on the bordered thoracic margins, deeply constricted between the equally elevated cephalic and thoracic regions, fovea Y-shaped with long arms and three or four striae almost converging towards fovea. Cephalic region narrower than the prominently broad thorax, with a strongly indented midposterior end. Eight eyes in two strongly recurved rows, AE slightly shorter than PE (0.60 : 0.64 mm) but more strongly recurved. Eye diameter (mm): AME = 0.12, PME = PLE = 0.08, ALE = 0.06. Eye separation: AME–AME and AME–ALE subequal to one PME diameter, PME one-half eye diameter, PME–PLE 2.25 times of either eye diameter. Clypeus margin nearly touches AME. Sternum grayish brown with black margins and a chalk-white transverse band below the slightly concave distal end opposite coxa I, subglobular white spots opposite each of coxae II and III, and a broad white spot on the tapering posterior end, end tip of sternum truncated. Labium twice wider than long (0.18 : 0.36 mm), yellow except the blackish brown basal one ninth, triangularly reduced towards a rounded distal end. Maxilla yellowish brown, partially bulging in the inner apical one third opposite scopula and slanted lateral side of labium, serrula dark brown. Chelicera vertical, yellow with grayish tinge frontally, promargin with three teeth and retromargin with two. Legs yellow with black to grayish brown bands on distal ends of leg segments except femur III, band on femur very light, coxae III and IV yellow with gray tinge, tarsus three-clawed with 10–12 teeth in each superior claw, leg formula 1243. Palp yellow with apical one half of tarsus yellow brown, tarsus single-clawed with nine teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.56	0.68	1.12	1.04	0.52	4.92
2	1.36	0.60	0.92	0.92	0.56	4.36
3	1.00	0.36	0.56	0.48	0.48	2.88
4	1.40	0.56	0.92	0.88	0.48	4.24
Pedipalp	0.45	0.22	0.32	–	0.57	1.56

Abdomen blackish brown with white background, small and subglobular, dorsally with a pair of tubercles on the apicolateral one fifth and a median blackish brown pagoda-like folium emanating dorsad of the tubercle and terminating before anal tubercle, two brown sigilla slightly above tubercle and four light yellow-brown sigilla behind the tubercle. Lateral area white with a branching moss-like outgrowth. Venter grayish black with pits or cavities anteriorly. Spinnerets black and ringed with a similar color, including the anal tubercle. Epigynum ovate, with a broad and vertical scape covered dorsally by a transparent but chitinized scape-like shield, lateral margins well developed, spermathecae L-shaped posterolaterally.

Natural history: Sweep net-collected in June from a mungbean field infected with Cercospora leaf spot, planted in between 0.5-m-tall rice stubble. Inasmuch as rice stubble was dry, this spider must have came from

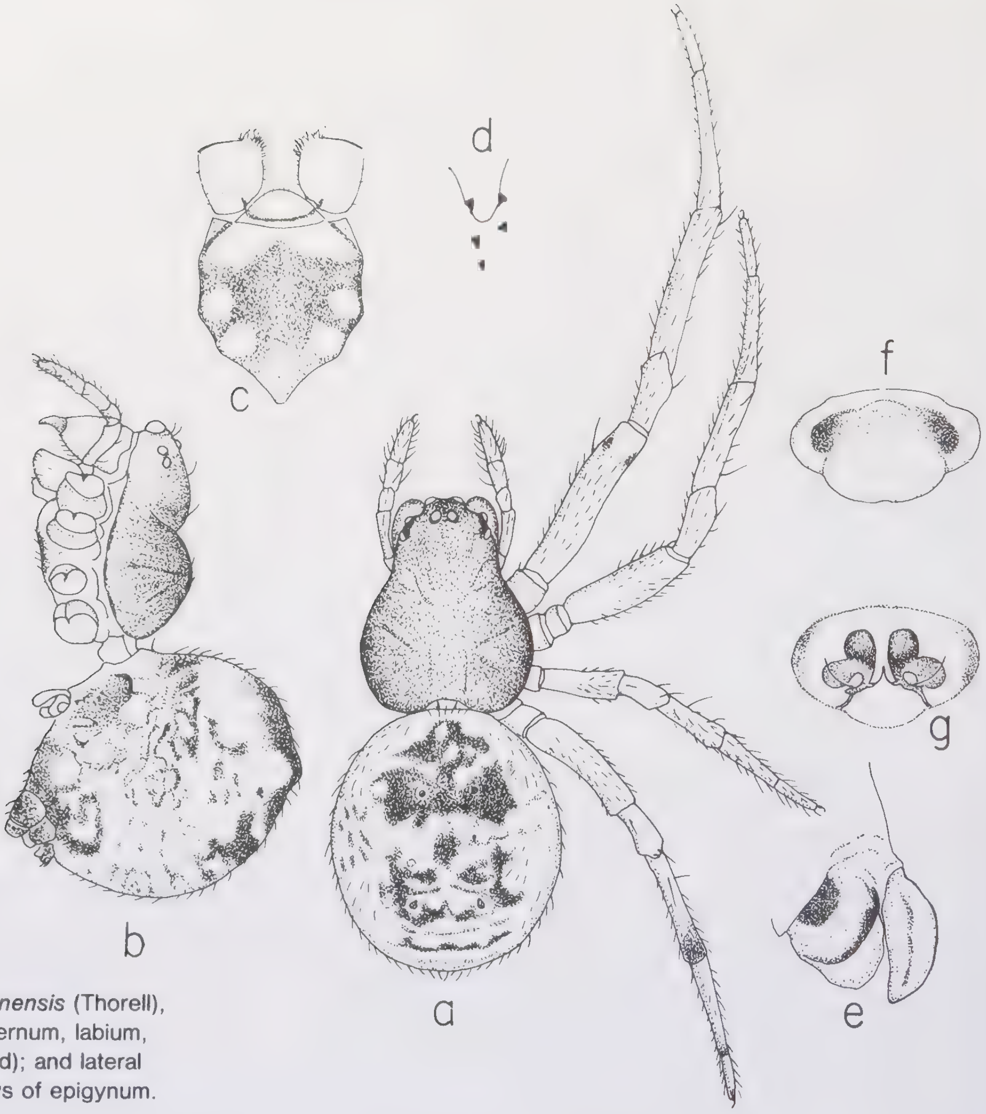


Fig. 370. Female *Cyclosa mulmeinensis* (Thorell), dorsal (a) and lateral (b) views; sternum, labium, and maxillae (c); cheliceral teeth (d); and lateral (e), dorsal (f), and ventral (g) views of epigynum.

mungbean and was possibly a predator of mungbean pests, viz. beanfly, leafhoppers, etc. A variant female was netted from ricefield in July.

Material examined: PHILIPPINES: *Cebu Is.*, Cebu Prov., Toledo, one female, 23 June 1984, A.T. Barrion; Bohol Is., Bohol Prov., Carmen, one female, 14 July 1989, H. Justo.

Distribution: Widely distributed from Africa to East Asia (Japan, Taiwan), Philippines (new record).

Cyclosa parangmulmeinensis new species
(Fig. 372a–j)

Description:

Female: Total length 6.04 mm long. Cephalothorax 2.08 mm long, 1.52 mm wide, 1.20 mm high. Abdomen 3.96 mm long, 2.88 mm wide, 2.80 mm high. Cephalothorax dark brown, pale towards distinctly separated cephalic and darker from the constricted cephalic groove down to thorax. Eye margins black. Fovea V-shaped in a shallow groove, narrow cephalic region more hirsute than the much broader and more elevated thorax. Eight eyes in two strongly recurved rows, length of AE = 0.72 mm shorter than PE = 0.78 mm. Eye diameter (mm): AME = 0.18, ALE = PME = PLE = 0.08. AME separation one PLE diameter. AME–ALE separation seven times PME separation. PME separation one fourth eye diameter. PLE separation three PME diameters. Clypeus height subequal to PME and LE separation. Sternum heart-shaped and hairy, with a pair of transverse ablong white spots opposite coxa I, a vertical spot posteriorly and a pair each of globular white spots opposite coxae II and III. Labium narrow and flat basally, rounded apically with yellow distal and deep brown proximal. Maxilla longer than wide, yellowish brown with grayish tinge except yellow inner area opposite scopula, serrula prominent and dark brown to

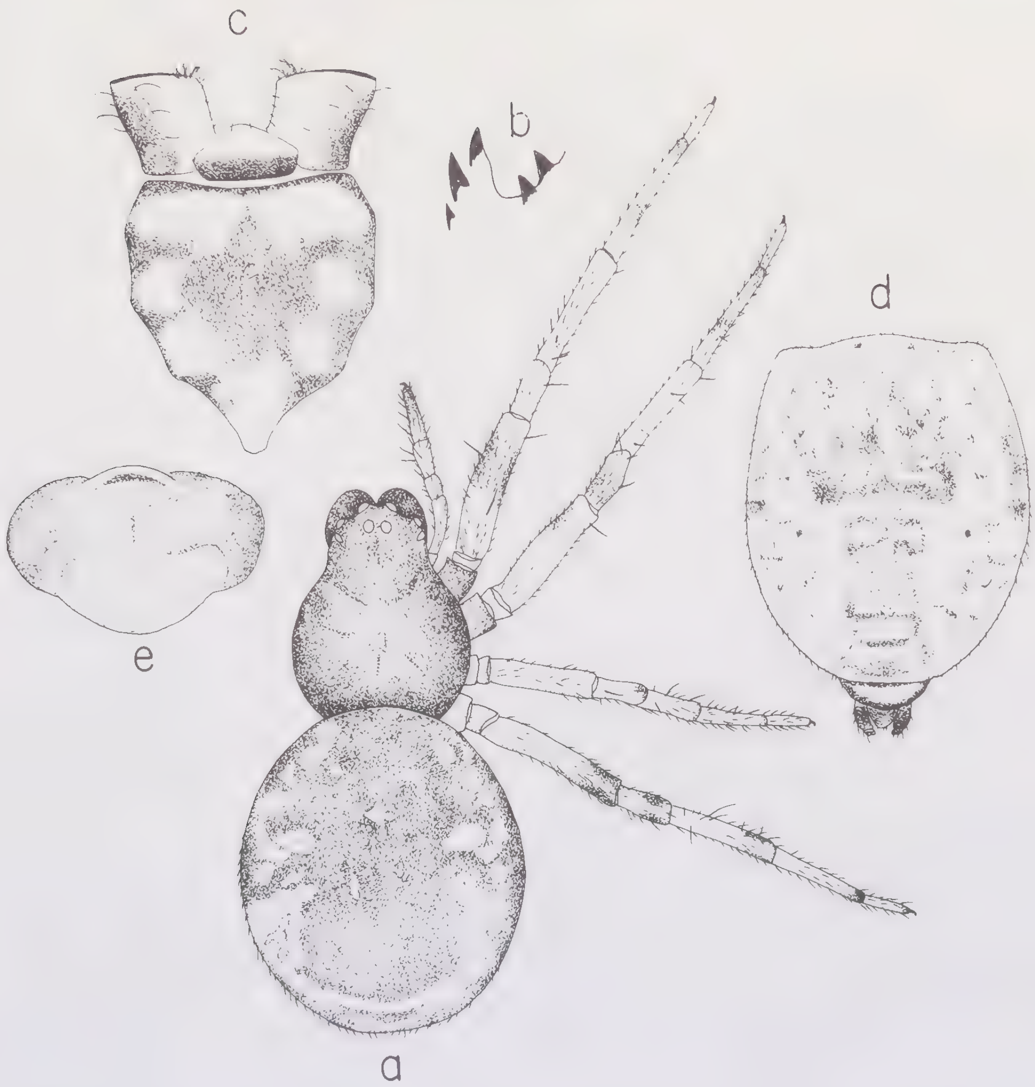


Fig. 371. A variant female of *C. mulmeinensis* (Thorell) (a); cheliceral teeth (b); sternum, labium, and maxillae (c); dorsum of abdomen (d); and epigynum (e).

black. Chelicera vertical, yellow-brown with boss, three promarginal and two retromarginal teeth. Legs yellow with black bands on distal apices of all leg segments except femur III, spines not prominent, tarsus three-clawed with 8–12 teeth in each superior claw. Leg formula 1423. Pedipalp yellow except brown tarsus, single clawed with six teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.77	0.83	1.31	1.16	0.66	5.73
2	1.50	0.75	1.05	1.00	0.61	4.91
3	1.05	0.50	0.61	0.61	0.50	3.27
4	1.72	0.66	1.05	1.00	0.61	5.04
Pedipalp	0.50	0.24	0.40	–	0.56	1.70

Abdomen globular with a pair of tubercles anteriorly, dorsum white mottled with irregular patches to transverse thin gray bands. Two pairs of ovoid, midlongitudinal sigilla in between and below dorsal humps. Venter of abdomen chalky white and yellow along epigynal area. Anal tubercle black. Spinnerets black dorsolaterally, yellow inwardly. Epigynum bulbous, scape very broad, inward curved without median cleft, brown apically and black basally, lateral margin prominent and kidney-like.

Variation: Range of length 5.04–6.04 mm, carapace length 1.55–2.08 mm, width 1.52–1.55 mm. Abdominal length 3.38–3.96 mm, width 2.77–3 mm.

Etymology: Named after its close similarity to *C. mulmeinensis*.

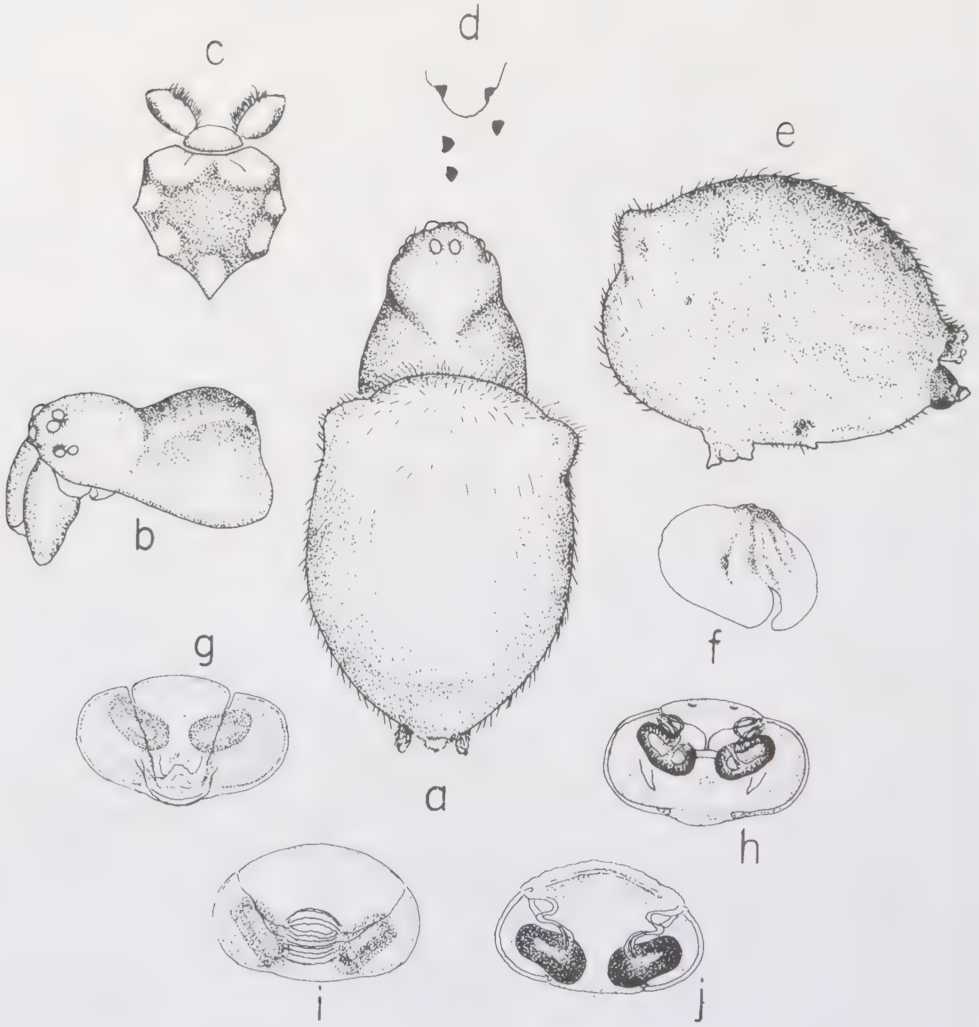


Fig. 372. Female *Cyclosa parangmulmeinensis* n. sp. (a); side view of cephalothorax (b); sternum, labium, and maxillae (c); cheliceral teeth (d); side view of abdomen (e); lateral (f), dorsal (gi) and ventral (hj) views of epigynum.

Natural history: Two specimens were collected in June from webs in between stands of *Leucaena leucocephala* (Lam.) de Wit. A female was sorted out from a collection taken from high suction trap set at the center of a ricefield in April. *C. parangmulmeinensis* preyed on *Leucaena* psyllid, *H. cubana*.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype female, 18 April 1980, T.J. Perfect; *Cebu Is.*, Cebu Prov., Cebu City, two female paratypes, 23 June 1984, A.T. Barrion.
Distribution: Philippines.

Cyclosa krusa new species
(Fig. 373a–h)

Description:
Male: Total length 4.15 mm. Cephalothorax 1.90 mm long, 1.40 mm wide, 1.40 mm high. Abdomen 2.25 mm long, 1.40 mm wide, 1.60 mm high. Cephalothorax dark reddish brown with eight eyes in two strongly recurved row. Eye diameter (mm): AME = 0.13, PME = 0.12, ALE = 0.10, PLE = 0.08. Eye separation (mm): AME–AME = ALE–AME = 0.13, PME–PME = 0.04, PME–PLE = 0.21. LE contiguous. MOQ-AW 1.25 times wider than MOQ-PW, the latter equal to length. Clypeus height small, ca. one third AME diameter. Sternum dark red-brown, similar to labium and maxillae, longer than wide. Chelicerae reddish brown with transverse rings. Promargin bears four teeth and two or three in the retromargin. Leg yellowish to orange-brown with black or gray apices and bases, apical one half and entire metatarsus and tarsus black. Spination in femur I = 3-0-2-0, tibia I = 1-3/7-2-0, venter of tibia I with three to seven bristles and metatarsi I has two to four. Tibia II with a pair of strong prolateral subapical spines, most subapical spine curved and slightly sickle-shaped. Metatarsus I/tarsus I = 2.00. Leg formula 1243. Pedipalp slightly shorter than femur I. Patella with long thin dorsolateral spines. Tibia with yellow thin flange slightly extended to cymbium, middorsum with one long spine. Embolus and terminal apophysis sharply pointed. Conductor broad at tip seen in top view and cone-like in

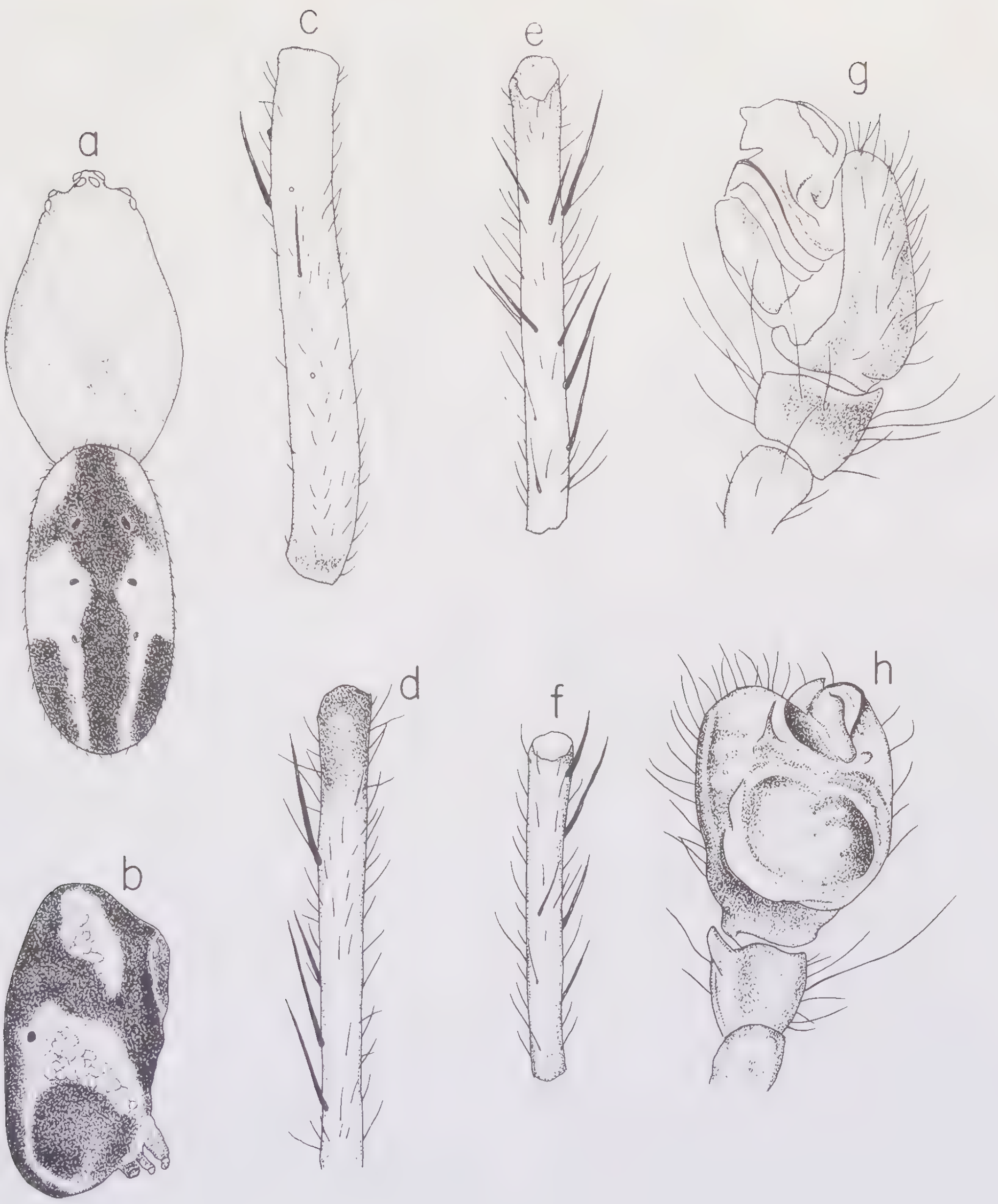


Fig. 373. Male *Cyclosa krusa* n. sp. (a); side view of abdomen (b); dorsal view of femur I (c); dorsal (d) and ventral (e) views of tibia I; ventral view of tibia II (f); and retrolateral (g) and ventral (h) views of pedipalp.

ventral view. Cymbium brownish gray, rounded apically longer than wide.

Length of leg and pedipalps segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.80	0.60	1.70	1.60	0.80	6.50
2	1.40	0.50	1.10	1.10	0.60	4.70
3	0.80	0.40	0.70	0.50	0.40	2.80
4	1.20	0.50	1.20	0.85	0.45	4.20
Pedipalp	0.55	0.25	0.20	–	0.75	1.75

Abdomen with a cross-like blackish brown to black median band on a yellow background, anterior end pale brown with dark brown setae, posterolateral one third with a large black spot, elongate, rounded at both ends, without humps, median longitudinal band of the cross lined with four pairs of brown spherical spots. Laterals black with an oblique large yellow band. Venter black except a broad median yellow band. Spinnerets brownish black except yellow median pair, posterior pair larger and longer than the anterior pair.

Etymology: Named after the cross ('krus' in Tagalog) band in the abdomen.
Natural history: The holotype male was collected by sweep net from upland rice (Azucena variety) in October.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 16 October 1985, A.T. Barrion.
Distribution: Philippines.

Cyclosa insulana (Costa)

(Figs 374a–f, 375a–g)

Epeira insulana Costa, 1835. Ann. Zool. 18: 65.
Cyclosa insulana Barrion and Litsinger, 1981. Philipp. Entomol. 5(1): 160.

Redescription:
Male (Fig. 374a–f): Total length 4.61 mm. Cephalothorax 2.11 mm long, 1.61 mm wide, 0.67 mm high. Abdomen 2.50 mm long, 1.33 mm wide, 1.0 mm high. Cephalothorax uniformly dark reddish brown, cephalic area protruded forward with AME in a tubercle (highly visible laterally), four or five moderately long and one long setae behind PLE. Fovea deep and longitudinal. Eight eyes in two recurved rows, AE strongly recurved but a little narrower than the less recurved PE. AME separated from ALE by a deep notch. Eye diameter (mm): AME = 0.13, PLE = 0.10, PME = ALE = 0.08. Eye separation: AME–AME as long one PME diameter, AME–ALE nearly as long as one AME diameter or 1.5 times ALE diameter, PME–PME 0.4 PME diameter, PME–PLE twice PLE diameter. Clypeus height large, 2.2 times AME diameter. Sternum as in the female, apical border with a thin transverse chalk-white band. Labium triangular and yellow apically. Maxillae yellow retromarginally and brown promarginally. Chelicerae light brown with two promarginal and no retromarginal teeth. Legs with alternating brown and yellow bands in femora, patellae, and tibiae I–IV and metatarsi III and IV, metatarsi I and II brown with light gray tinge in their apices and tarsi I–IV brown. Tibiae II most spinous, promargin with six or seven spines. All trochanters brown, coxae I and II brown, III and IV yellowish brown. Leg formula 1423. Subapices of femora, tibiae and patellae each with long setae, longest in patellae and shortest in tibiae. Paracymbium bluntly rounded, embolus spiral, tegular apophysis moderately long but sharp.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.94	0.67	1.33	1.17	0.50	5.61
2	1.72	0.67	1.17	1.10	0.55	5.21
3	1.28	0.44	0.72	0.72	0.47	3.63
4	1.72	0.53	1.28	1.17	0.58	5.28
Pedipalp	0.44	0.25	0.11	–	0.83	1.63

Abdomen elongate, silvery white dorsally with two pairs of black spots, posterior end blunt, subposterior tubercles absent. Posteroventral end of abdomen with two transverse black stripes behind the spinnerets.
Female (Fig. 375a–g): Total length 5.76 mm. Cephalothorax 1.80 mm long, 1.20 mm wide, 0.92 mm high. Abdomen 3.96 mm long, 1.50 mm wide, 1.60 mm high. Cephalothorax longer than wide, brown except longitudinal dark brown lateral margins, yellow intereye spaces, and black eye margins. Dark brown lateral margins with a thin yellow band in the middle. Fovea not prominent. Eye diameter (mm): AME = 0.10, PME = 0.09, ALE = PLE = 0.08. Eye separation: AME–AME one third longer than one AME diameter, AME–ALE one fifth longer than AME or one third longer than ALE diameter, PME–PME one third eye diameter, PME–PLE twice PME diameter. Clypeus height one third AME diameter. Sternum gray-brown with six oblong to subtriangular yellow bands opposite coxae I–III. Labium longer than wide, brownish yellow except yellow anterior. Maxillae a little longer than broad, yellow except blackish brown lateral margins, and apices of black lateral bands hooked. Chelicerae typical of the genus, promargin with four teeth and retromargin with only three teeth. Legs yellow except black bands in the apical one half and submedian part of femora I and IV, anterior and posterior ends of all patellae, bases, middle, and apices of tibiae and metatarsi I–IV, tibia III a/b = 0.43 and l/d = 0.33, tibia IV a/b = 0.41 and l/d = 0.19, tibia III with two long (dorsal and subdorsal) trichobothria, tibia IV with four or five long trichobothria. Leg formula 1423.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.60	0.68	1.24	1.00	0.58	5.10
2	1.52	0.64	1.08	0.88	0.52	4.64
3	1.40	0.40	0.64	0.56	0.48	3.48
4	1.80	0.60	1.06	0.88	0.52	4.86
Pedipalp	0.44	0.20	0.28	–	0.56	1.48

Abdomen with a broad longitudinal silvery white dorsal band, silvery band extended laterally downward submedially, subposterior end with a pair of small black blunt tubercles and margin of the silvery white band brown. Spinnerets slightly diverging from each other, posterior pair a little smaller than the anterior pair. Epigynum quite similar to *C. dosbukolea* except for a broader median orifice.
Natural history: Two females were collected by D-Vac from upland rice in August. A male was sweep-net-collected from lowland rice in March. Both sexes, a male and a female, were collected by D-Vac suction machine from rainfed lowland rice at 60 days after transplanting (DT) in September.
Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Tanauan, Cale Vill., one female, 16 August 1977, A.T. Barrion; Gonzales Vill., one female, 20 August 1978, A.T. Barrion and M. Perez; Laguna Prov., Los Baños, one male, 15 March 1977, A.T. Barrion; *Palawan Is.*, Palawan Prov., Aborlan, Cabigaan Vill.

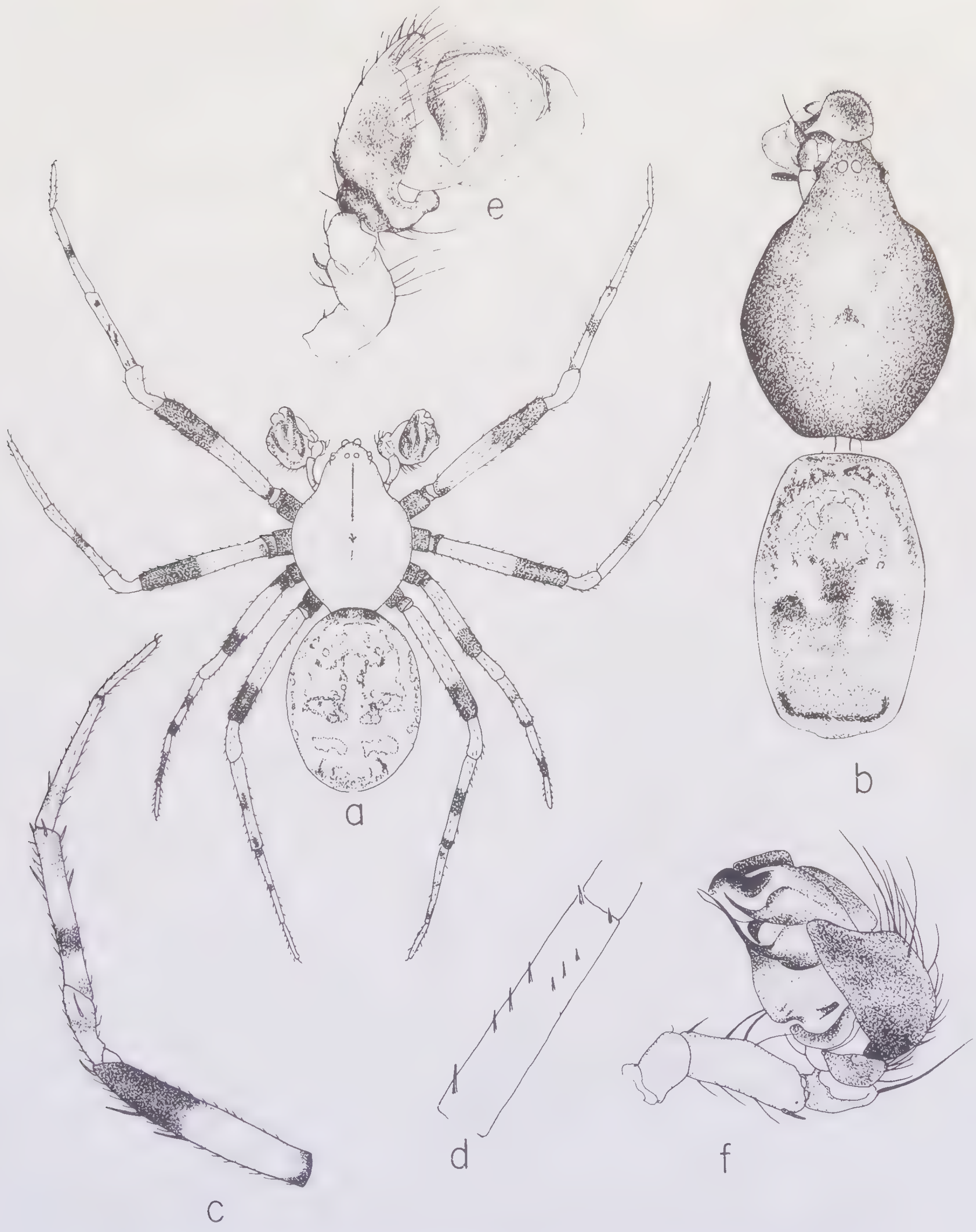


Fig. 374. Male *Cyclosa insulana* (Costa) with globose (a) and subelongate (b) abdomen; leg II (c); inner side of tibia II (d); and lateral views of pedipalp (ef).

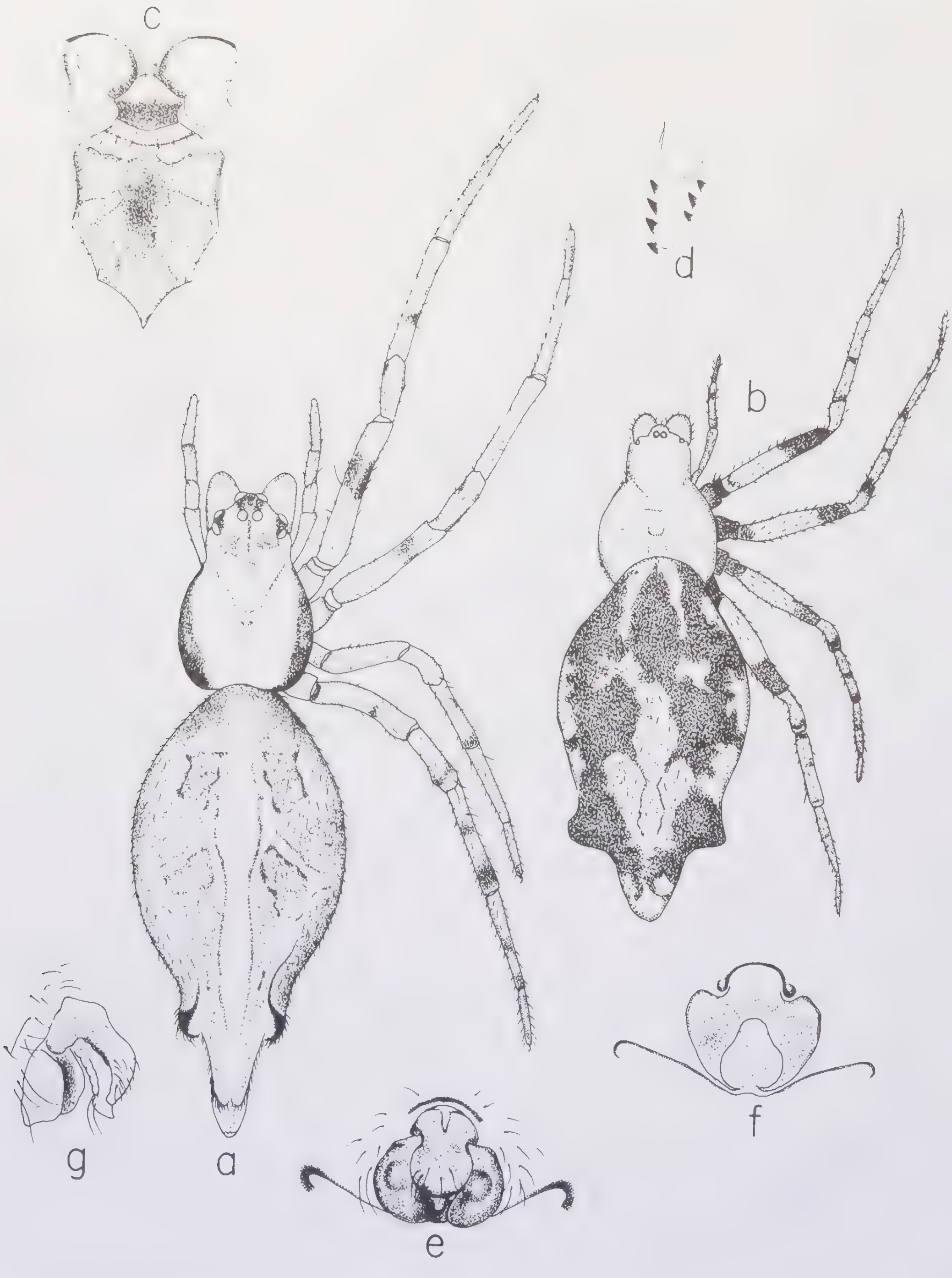


Fig. 375. Female *Cyclosa insulana* (Costa) with carapacial brown band and moderately long posterior end (a); without carapacial band and with short posterior end (b); sternum, labium, and maxillae (c); cheliceral teeth (d); dorsal (e), ventral (f), and lateral (g) views of epigynum.

one female and one male, 28 September 1987, A.T. Barrion; Aborlan, Palawan National Agricultural College (PNAC) Vill., one male, 2 October 1987, A.T. Barrion.
Distribution: Mediterranean to Australia, including the Philippines.

Cyclosa otsomarka new species

(Fig. 376a–f)

Description:
Male: Total length 3.85 mm. Cephalothorax 1.95 mm long, 1.30 mm wide, 1.10 m high. Abdomen 1.90 mm long, 1.50 mm wide, 1.50 mm high. Cephalothorax reddish brown except black longitudinal fovea and narrow eye margins. Eight eyes in two recurved rows. Eye diameter (mm): AME = 0.15, PME = 0.11, ALE = PLE = 0.10. Eye separation (mm): AME–AME = PLE–PME = 0.18, ALE–AME = 0.10, PME–PME = 0.05. MOQ 1.6 times wider in front than behind. Clypeus height about 0.66 AME diameter. Sternum reddish brown with slight yellow patches, longer than wide, concave anteriorly, and tapered posteriorly. Labium and maxillae as in the genus. Chelicerae with three promarginal teeth, three or four small teeth present between apical and subapical promarginal teeth. Retromargin with four moderately large apical and basal teeth and two minute teeth in between. Legs yellowish with grayish brown femora I and II and apices of all tibiae. Femur I with three strong midprolateral spines and tibia II with two prolateral spines. Metatarsus I/tarsus I = 2.58. Leg formula 1243. Pedipalp as long as metatarsus II. Femur with a basoventral spine. Embolus sickle-shaped.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.75	0.70	1.60	1.55	0.60	6.20
2	1.50	0.60	1.20	1.30	0.55	5.15
3	1.00	0.40	0.60	0.65	0.45	3.10
4	1.50	0.60	1.00	1.25	0.45	4.80
Pedipalp	0.40	0.26	0.25	–	0.40	1.31

Abdomen black with eight white large spots dorsally, venter with a transverse C-shaped white band and a yellow spinneret area, including the anterior pair of spinnerets.
Etymology: Named after the eight spots of the abdomen.
Natural history: The holotype male was D-Vac-collected from upland rice in August.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 10 August 1985, M. Perez.
Distribution: Philippines.

Cyclosa dosbukolea new species

(Fig. 377a–i)

Description:
Female: Total length 8.17 mm. Cephalothorax 2.42 mm long, 1.75 mm wide, 1.28 mm high. Abdomen 5.75 mm long, 2.67 mm wide, 3.00 mm high. Cephalothorax black, cephalic area distinct from thoracic area with a distinct border. Eight eyes in two recurved rows. Eye diameter (mm): PME = 0.12, AME = ALE = 0.11, PLE = 0.10. Eye separation: AME–AME a little more than one AME diameter, AME–ALE twice ALE diameter, PME–PME six times eye diameter, PME–PLE three times PLE diameter. Clypeus height one third PME or 0.4 AME diameter. Sternum black with four lateral subovate yellow spots and transverse subapical band slightly interrupted in the middle. Labium black, yellow in the apical one third. Maxillae yellow promarginally and black retromarginally. Chelicerae black except the yellow-brown fang, promargin with four teeth and retromargin with three teeth. Legs yellow with black bands, apical one half and base of femora I, II, and IV black, similar to all patellae, femur III black in the apical one third with black spot in the middle and base, tibiae I–IV and metatarsi I–IV black basally, medially, and apically, tarsi blackish brown in the apical one half. Tibiae III and IV with two and three long trichobothria dorsally and dorsolaterally, respectively, in the basal one third to one half. Tibia III a/b = 0.44, l/d = 0.20, tibia IV a/b = 0.35 and l/d = 0.17. Tibia I with five strong ventral spines. Leg formula 4123.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.40	1.00	2.00	1.56	0.68	7.64
2	2.24	0.92	1.60	1.52	0.64	6.92
3	1.58	0.58	1.00	0.88	0.64	4.68
4	2.60	0.86	1.92	1.60	0.74	7.72
Pedipalp	0.60	0.40	0.48	–	0.80	2.28

Abdomen black with silvery patches dorsolaterally, twice longer than wide, rounded apically and posteriorly but broadest medially, with two short bluntly rounded tubercles subposteriorly. Laterally the abdomen is subtriangular, slightly concave dorsally and hump-like anterodorsally. Spinnerets at the bottom of the widest abdominal regions, anterior pair of spinnerets bigger than the posterior pair. Epigynum black except the brownish median orifice surrounded by the anterior and lateral sclerotized plates, posterior epigynal margin cleft opposite the median orifice, anterior epigynal margin with an ovate transparent band. Septum curved and directed laterally in the side view.
Etymology: The specific ephithet was a combination of Spanish and Tagalog words: ‘dos’ means two and ‘bukol’ refers to the two subposterior humps.
Natural history: A female was collected from the slanted wing part of a Malaise trap set on top of a hill in September.
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental, Claveria, Kalilangan Vill., holotype female, 23 September 1987, A.T. Barrion.
Distribution: Philippines.

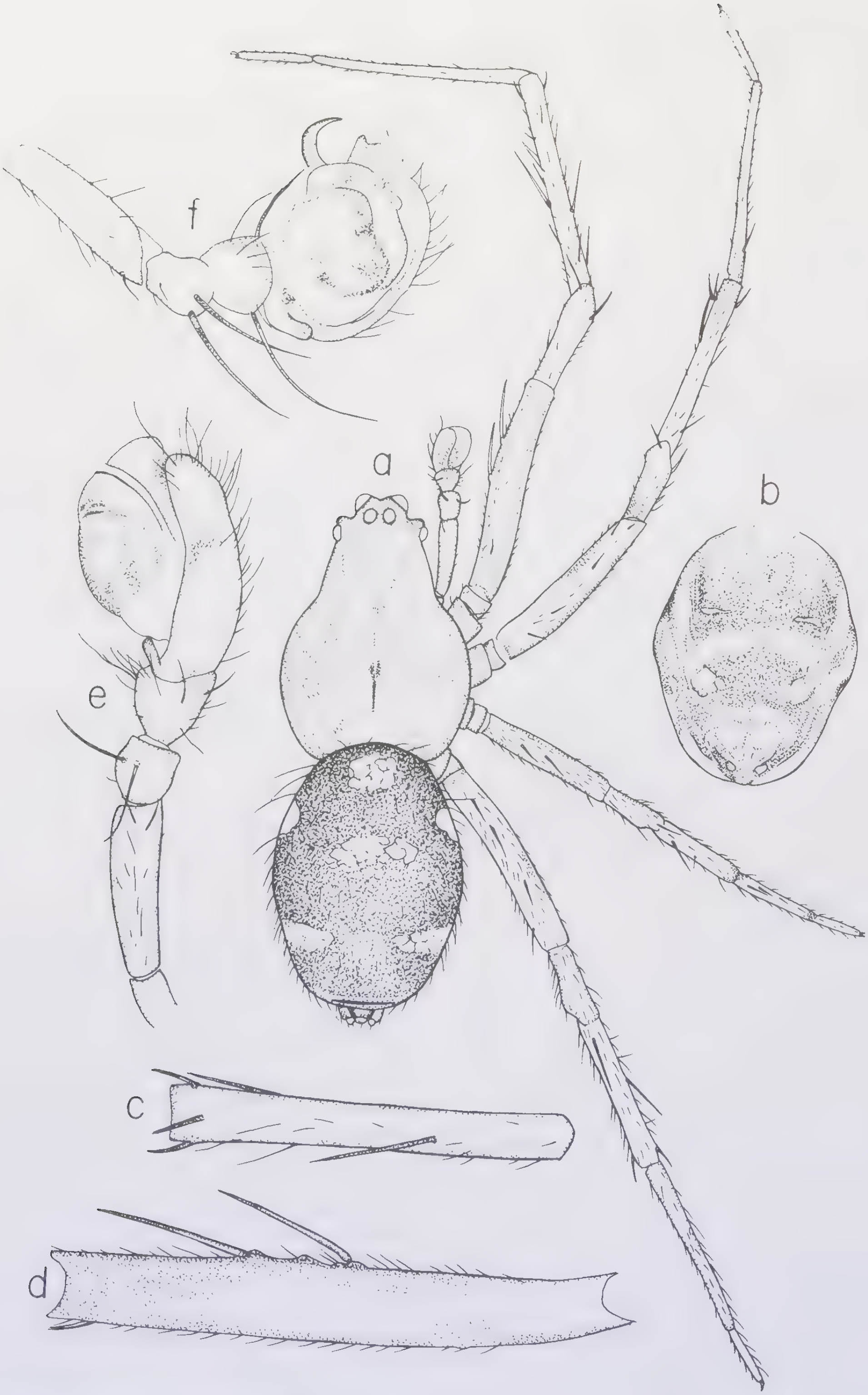


Fig. 376. Male *Cyclosa otsomarka* n. sp. (a); abdominal venter (b); tibia II (c); femur I (d); and retrolateral (e) and ventral (f); views of pedipalp.

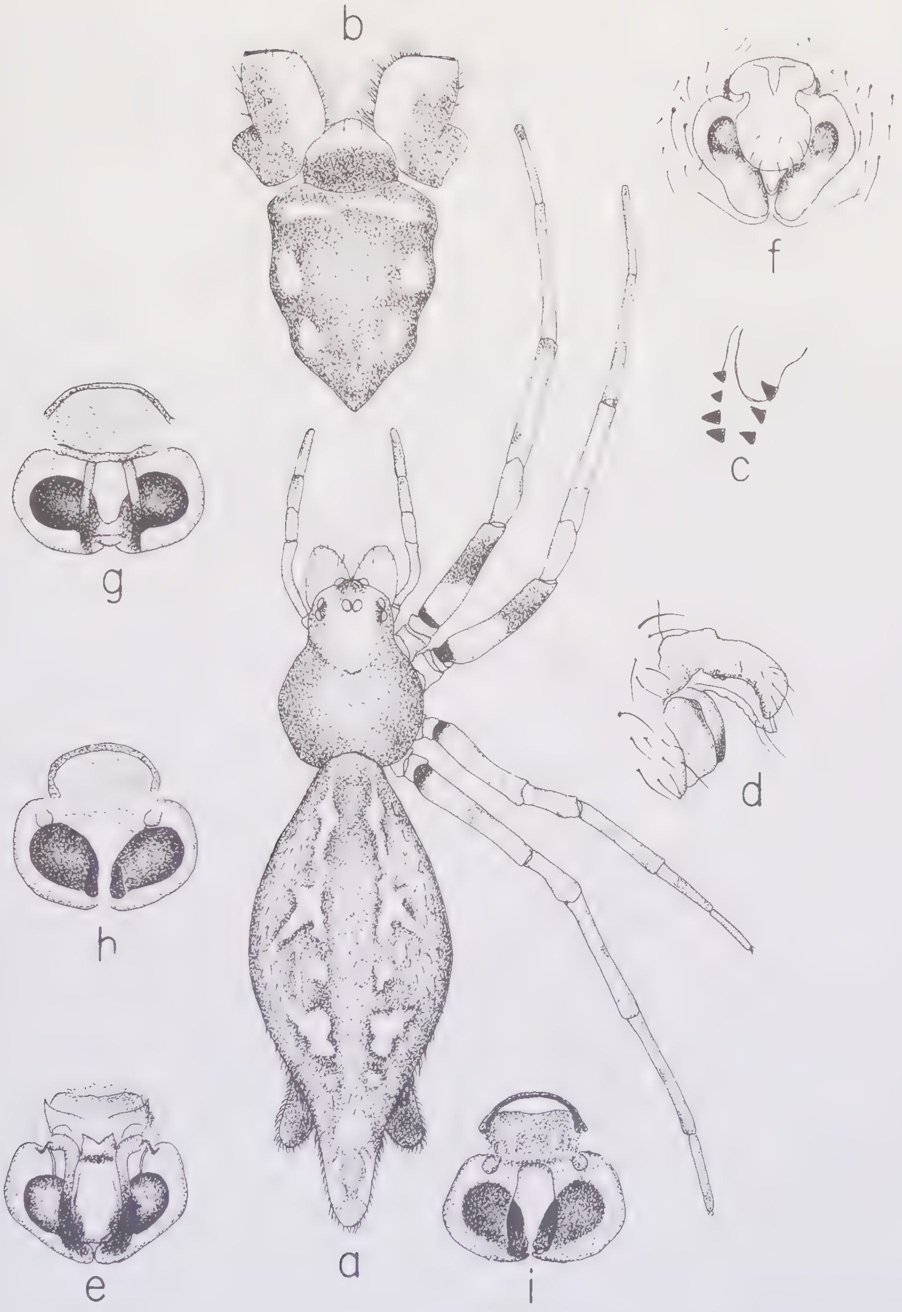


Fig. 377. Female *Cyclosa dosbukolea* n. sp. (a); sternum, labium, and maxillae (b); cheliceral teeth (c); lateral (d), dorsal (ef), and ventral (g–i) views of epigynum.

Cyclosa parangtarugoa new species

(Fig. 378a–f)

Description:

Male: Total length 5.70 mm. Cephalothorax 2.30 mm long, 1.75 mm wide, 0.90 mm high. Abdomen 3.40 mm long, 1.90 mm wide, 1.90 mm high. Cephalothorax brownish yellow with black eye margins, cephalic area distinctly separated from thoracic area by a deep thoracic groove. Eight eyes in two recurved rows, AE more recurved than PE row. Eye diameter (mm): AME = 0.11, ALE = 0.10, PME = PLE = 0.09. Eye separation (mm): AME–AME = 0.15, AME–ALE = 0.18, PME–PME = 0.04, PME=PLE = 0.25. MOQ-AW 1.43 times wider than MOQ-PW, and slightly more than length. Clypeus height one third AME diameter. Sternum heart-shaped, brown, with white lateral borders. Labium and maxillae yellow and shape as in the genus. Chelicerae yellow, with grayish brown mottles, promargin with four teeth and retromargin with three teeth. Legs yellow with brown apices and median bands. Spination in femur I = 0-0-2-0, tibia I = 1-4(1-1-2)-0-0, and

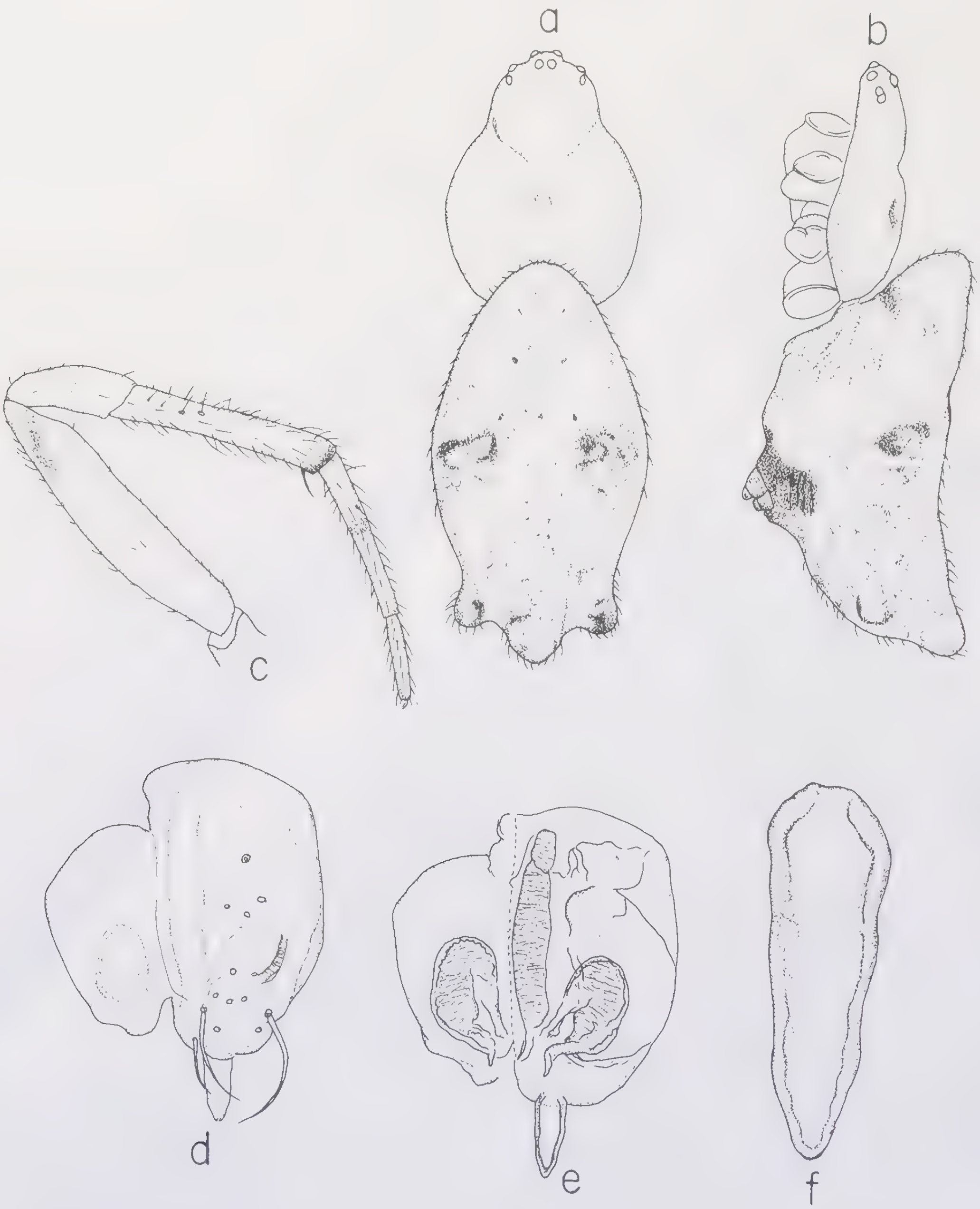


Fig. 378. Male *Cyclosa parangtarugoa* n. sp., dorsal (a) and lateral (b) views; leg I (c); dorsal (d) and ventral (e) views of epigynum; and scape (f).

none in metatarsus I. Metatarsus I/tarsus I = 2.00. Leg formula 1243. Pedipalp shorter than femur I but slightly longer than femur IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.25	0.95	1.70	1.40	0.70	7.00
2	1.95	0.90	1.45	1.20	0.60	6.10
3	1.30	0.55	1.00	0.75	0.55	4.15
4	2.00	0.70	1.40	0.80	0.65	5.55
Pedipalp	0.63	0.25	0.40	-	0.80	2.08

Abdomen silvery with a pair of transverse brown ovoid spots at midlength, pair of humps, each with a brown spot, subposteriorly just behind the posterior hump. Venter silvery with brown markings and black around the circular ring of spinnerets. Epigynum with a long median scape and a penis-like process at tip, lined with 16 setae. Spermathecae oblong with converging ends after the inner subposterolateral openings, about twice longer than wide.

Etymology: Named after the penis-like ('parang' = like + 'tarugo' = penis in Tagalog + a) appearance of

median scape process.
Natural history: Collected from upland rice in July.
Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Sta. Cruz Vill., holotype female, 7 July 1988, A.T. Barrion.
Distribution: Philippines.

Cylosa saismarka new species
(Fig. 379a–h)

Description:
Female: Total length 7.25 mm. Cephalothorax 2.30 mm long, 1.80 mm wide, 1.15 mm high. Abdomen 4.95 mm long, 2.90 mm wide, 3.20 mm high. Cephalothorax light reddish brown with a yellow V-shaped mark posterior to cephalic area and a pair of trifid yellow striae directed towards deep fovea. Eight eyes in two recurved rows, each with black margins, AE more recurved than PE row. Eye diameter (mm): PME = 0.11, AME = ALE = PLE = 0.10. Eye diameter (mm): AME–AME = 0.13, AME–ALE = 0.19, PME–PME = 0.03, PME–PLE = 0.25. MOQ-AW as long as length, 1.29 times longer than MOQ-PW. Clypeus height small, 0.80 AME diameter. Sternum black, heart-shaped, bears a transverse silvery white band anteriorly with median interruption and a silvery white spot opposite each of coxae II and III, longer than wide, and pointed posteriorly in front of coxae IV. Labium wider than long, dark reddish brown basally and yellow apically. Maxillae dark reddish brown except yellow inner area adjacent to labium. Chelicerae reddish brown with four promarginal and three retromarginal teeth, left chelicera with a black triangular spot midventrally. Legs yellowish brown with light to dark reddish brown rings in the apices, bases, and midlength of each segment, apical one half of femora I, II, and IV black. Coxa IV bears a small apicolateral tubercle directed towards abdomen. Spination in femur I = 0-0-1-0, tibia I = 0-5-0-0, metatarsus I = 0-0-0-0. Metatarsus I/tarsus I = 2.33. Leg formula 1423. Pedipalp shorter than femur I but longer than femur IV, yellowish brown except black apices of tibia and apical three fourths of single-clawed tarsus.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.20	0.90	1.60	1.40	0.60	6.70
2	2.00	0.80	1.40	1.15	0.60	5.95
3	1.40	0.60	0.90	0.70	0.50	4.10
4	2.10	0.70	1.50	1.35	0.60	6.25
Pedipalp	0.70	0.30	0.40	–	0.75	2.15

Abdomen silvery with a median longitudinal silvery brown band, a pair of longitudinal irregularly ovoid subdorsal subapical blackish brown spots, a pair of subrectangular subdorsomedian blackish brown spots, and a small brownish spot on each subposterolateral tubercle. Anterior and posterior ends of abdomen moderately narrow and rounded, both upwardly thrusted in opposite directions, anterior end slightly overhangs carapace. Subposterolateral tubercles rounded apically, with constrictions anterior and posterior to its base. Venter black with silvery white anterior and lateral band, the latter extended inwards at midlength. Anterior of spinnerets with a large silvery white spot and four small spherical spots in a transverse row anterior to the large spot. Posterior of black spinnerets confined in a circular ring, with numerous concave striations extended along laterals of abdomen, forming U-lines. Epigynum bears a large median scape not reaching epigastric furrow, partly black by the lateral lobes. Apex of scape rounded and moderately constricted basally. Lateral lobes kidney-shaped, converging posteriorly and slightly constricted and wrinkled anterolaterally. Spermathecae oblong, converging posteriorly underneath apex of scape.
Etymology: Named after the six spots in abdomen ('sais' + 'marka').
Natural history: All specimens were collected by D-Vac machine from slash-and-burn upland rice in September.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype female, 18 September 1985, A.T. Barrion and M. Perez; two females, one subadult male and one young female paratypes, same data as holotype.
Distribution: Philippines.
Remarks: The paratypes have more pointed posterior tubercle, no transverse midband in femur I, and reduced apical bands in the femora.

Cyclosa baakea new species
(Fig. 380a–f)

Description:
Female: Total length 9.80 mm. Cephalothorax 2.50 mm long, 1.40 mm wide, 1.30 mm high. Abdomen 7.30 mm long, 2.40 mm wide, 2.50 mm high. Cephalothorax reddish brown with thin black eye margins and whitish lateral margins in the thoracic area. Cephalic almost as long as thoracic area in lateral view. Eight eyes in two rows typical of the genus. Eye diameter (mm): AME = 0.18, ALE = 0.13, PME = 0.12, PLE = 0.10. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.13, PLE–ALE = 0.03, PLE–PME = 0.23, PME–PME = 0.04. MOQ 1.64 times wider in front than behind. Clypeus height small, about 0.38 AME diameter. Sternum longer than wide, dark brown with silvery yellow marks in the middle, midanterior portion concave, and posterior end blunt in front of coxae IV. Labium subtriangular and yellow in apical one third. Maxillae with brown serrula and yellow inner margin. Chelicera vertical, brownish red with a prominent boss. Promargin and retromargin with three teeth each. Legs without strong spines, brown with yellow bands. Tibia I with three (1-1-1) ventral spines, all on the prolateral side. Metatarsus I/tarsus I = 2.56. Leg formula 4213. Pedipalp dark brown with a single claw, total length slightly more than length of femur I.

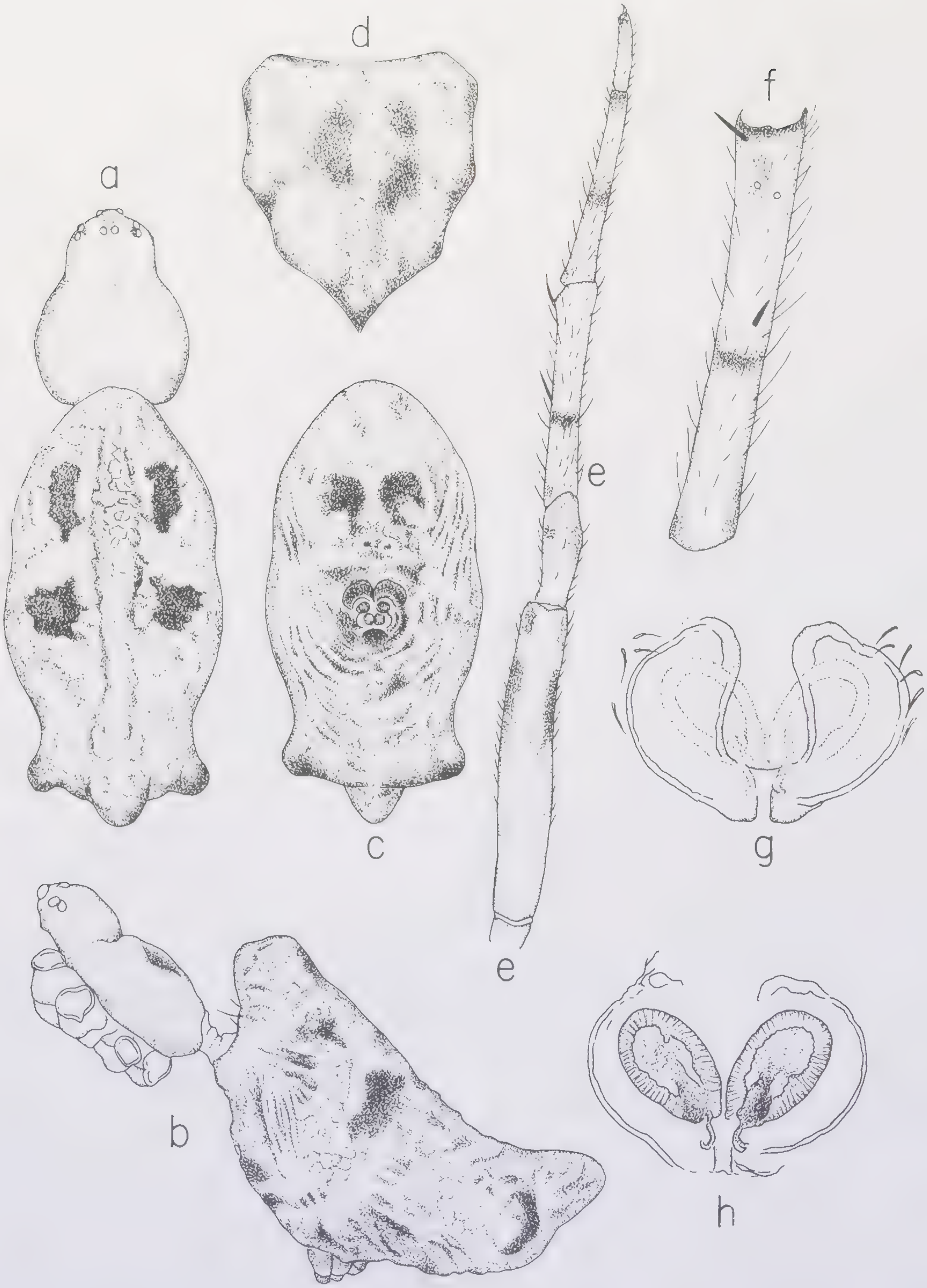


Fig. 379. Female *Cyclosa saismarka* n. sp., dorsal (a) and lateral (b) views; abdominal venter (c); sternum (d); leg I (e); tibia I (f); and dorsal (g) and ventral (h) views of epigynum.

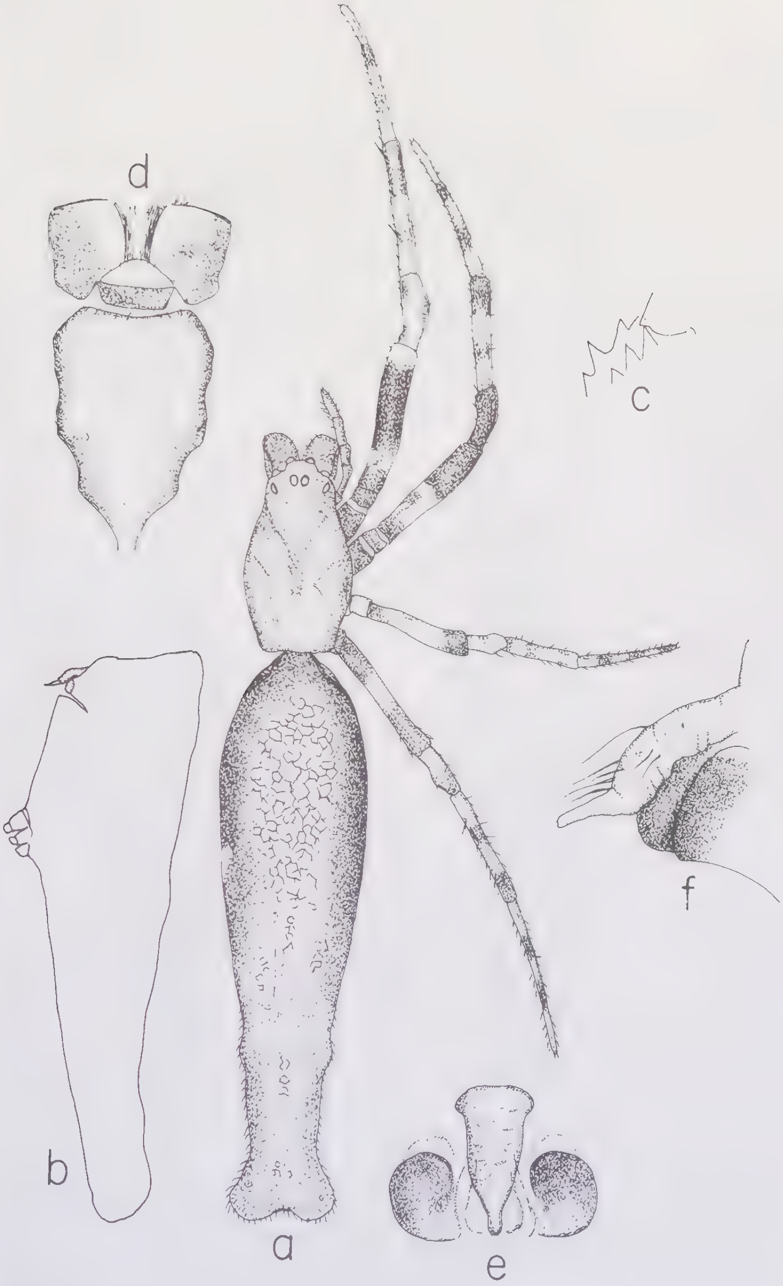


Fig. 380. Female *Cyclosa baakea* n. sp. (a); side view of abdomen (b); cheliceral teeth (c); sternum, labium, and maxillae (d); dorsal (e) and lateral (f) views of epigynum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.70	0.55	1.15	1.15	0.45	5.00
2	1.60	0.60	1.30	1.05	0.50	5.05
3	1.10	0.45	0.80	0.70	0.50	3.55
4	1.50	0.70	1.60	1.00	0.50	5.30
Pedipalp	0.55	0.25	0.40	–	0.60	1.80

Abdomen black with six pairs of brown spots in the more robust apical one half, posterior one half narrow with slight swelling in posterior one third. Tip of abdomen cleft in the middle, overall diameter about 0.70 abdominal width. Spinnerets in the ventroapical one third of abdomen. Epigynum in the ventroapical 0.06 of abdominal length. Scape long, curved at midlength, and its tip projected laterad.

Etymology: Named after the cleft, 'baak' in Tagalog, tip of abdomen.

Natural history: The holotype females were sweep-net-collected in lowland rice in February and a paratype female was handpicked in Mt. Makiling Forest from a shrub in March.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Laurel, holotype female, 10 February 1988, V.

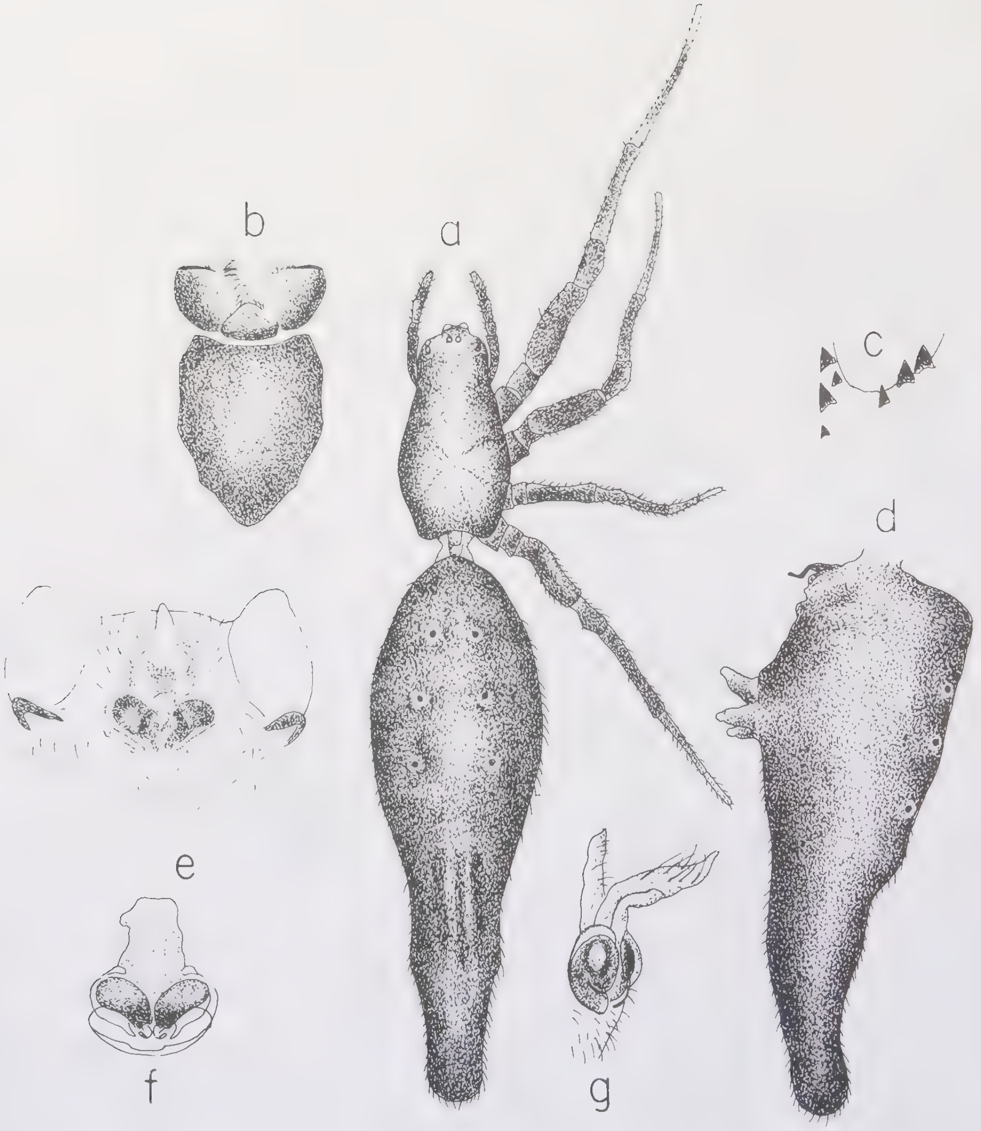


Fig. 381. Female *Cyclosa bifida* (Doleschall) (a); sternum, labium, and maxillae (b); cheliceral teeth (c); lateral view of abdomen (d); dorsal (e), ventral (f), and lateral (g) views of epigynum.

Viajante; Laguna Prov., Los Baños, one male paratype, 21 March 1989, B. Garcia.
Distribution: Philippines.

Cyclosa bifida (Doleschall)
(Fig. 381a–g)

Epeira bifida Doleschall, 1859. Act. Soc. Ind. Neerl. 5: 38.
E. macrura Thorell, 1877. Ann. Mus. Civ. Stor. Genova 10: 402.
Cyclosa bifida Simon, 1895. Hist. Nat. Araign. 1(4): 779.

Redescription:
Female: Total length 8.44 mm. Cephalothorax 2.00 mm long, 1.44 mm wide, 1.00 mm high. Abdomen 6.44 mm long, 2.00 mm wide, 2.48 mm high. Cephalothorax black, shape typical of the genus. Eye diameter (mm): AME–PME = 0.12, ALE = 0.10, PLE = 0.08. Eye separation: AME–AME one fourth less then one AME diameter, AME–ALE as long as one ALE diameter, PME–PME one fourth eye diameter, PME–PLE 1.7 times PME diameter. Clypeus height as long as one AME diameter. Sternum, labium, except distal end, maxillae, except latero-inner margin, and chelicerae same color as cephalothorax. Heart-shaped sternum, pointed posteriorly and slightly concave anteriorly. Promargin and retromargin of chelicerae with three and four teeth, respectively. Boss distinct. Legs moderately long, femora black except brown posterior end, patellae brown except for black tinge apically, tibiae and metatarsi with alternating brown and black bands, tarsi yellowish brown, tibia I with five dorsal trichobothria, submedian one the longest. Leg formula 1423. Pedipalps

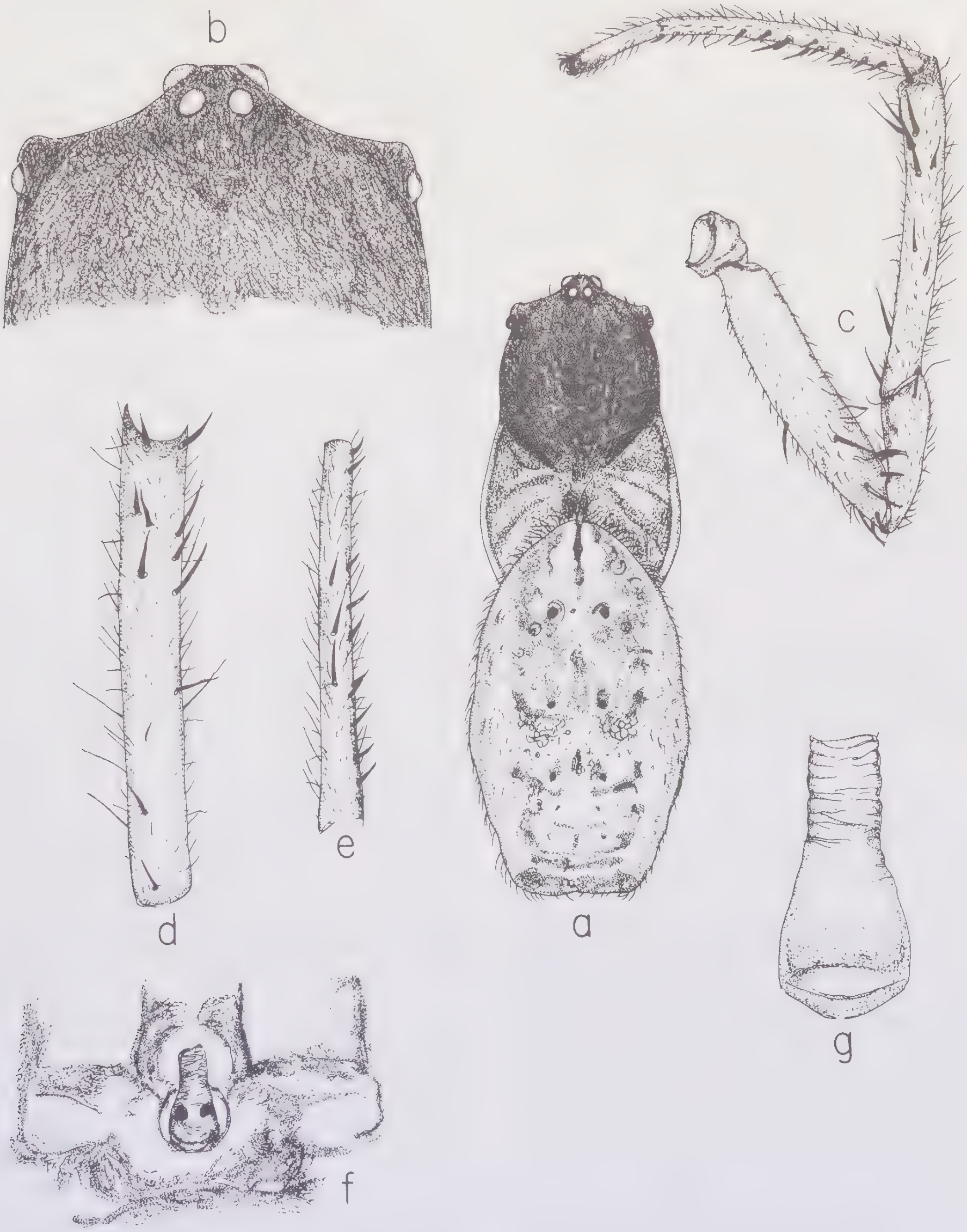


Fig. 382. Female *Singa hilira* n. sp. (a); head (b); leg I (c); venter of tibia I (d) and metatarsus I (e); epigynum (f); and scape (g).

black, with yellow shades in the bases of patellae, tibiae and tarsi spinous.

Abdomen black, with three pairs of sigilla in the broad anterior one half, narrowed posteriorly with a slight bulging subposteriorly, posterior end bluntly rounded. Spinnerets located in the basal one third.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.83	0.67	1.33	1.11	0.56	5.50
2	1.56	0.61	1.00	0.94	0.50	4.61
3	1.00	0.39	0.72	0.61	0.36	3.08
4	1.50	0.61	1.31	1.11	0.50	5.03
Pedipalp	0.50	0.22	0.39	–	0.61	1.72

Epigynum almost basal, scape porrect, spermathecae bean-shaped, with ends converging towards the posterior epigynal margin.
Natural history: Two females were collected by sweep net in abandoned weedy upland rice in October.
Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Aborlan, Cabigaan Upland Vill., two females, 7 October 1987, A.T. Barrion.
Distribution: India, Sri Lanka, New Guinea, Malaysia and the Philippines (new record).

Genus *Singa* C.L. Koch

Singa C.L. Koch, 1836. Die Arachniden 3: 42.

A theridiid-like genus of orb-weaver comprising about 12 species distributed in the Palaearctic, Oriental, Nearctic and Ethiopian regions of the world.

Singa C.L. Koch has cephalothorax and abdomen sparsely covered with very short hairs; AME the largest; MOQ wider in front than behind; short legs; patella I plus tibia I hardly longer than cephalothorax; male pedipalp's patella bears two apical dorsal spines; coxa I without spur and femur II without a groove. Epigyne has a scape.

The genus is a new Philippine record. So far only *S. hilira* n. sp. is known in the Philippines.

Singa hilira new species
(Fig. 382a–g)

Description:
Female: Total length 11.40 mm. Cephalothorax 5.10 mm long, 3.45 mm wide, 1.20 mm high. Abdomen 6.30 mm long, 3.90 mm wide, 2.10 mm high. Cephalothorax blackish brown to reddish brown with white hairs in the black moderately long cephalic area. Thoracic region reddish brown with a black, relatively deep, and square-like fovea. Eight eyes in two recurved rows. Eye diameter (mm): AME = 0.24, ALE = 0.19, PME = 0.18, PLE = 0.14. Eye separation (mm): AME–AME = 0.28, AME–ALE = 0.83, ALE–PLE = 0.10, PLE–PME = 1.10, PME–PME = 0.10. MOQ-AW 1.56 times wider than MOQ-PW and 1.15 times more than length. Clypeus height moderately small, 0.80 AME diameter. Sternum reddish brown, longer (2.10 mm) than wide (1.70 mm), pointed posteriorly in front of coxae IV. Labium wider than long, dark reddish brown with a yellow apical margin. Maxillae reddish brown with yellow inner one third. Chelicerae dark reddish brown, vertical, and robust. Promargin with six teeth, subbasal the largest. Retromargin with four teeth, basal tooth the largest. Legs yellow with strong ventral spines, usually in rows. Spination in femur I = 3-1-3-2 in left leg and 3-2-2-2 in right leg, tibia I = 0-12(2-1-1-2-2-1-1-2) in left leg with three retrolateral and one prolateral bristles. Right tibia I with 11 ventral spines. Metatarsus I bears 11 ventral spines in left leg and 13 in the right leg. Tibia II with 12 and nine ventral spines in right and left legs, respectively. Tibia IV = 2-4-1-4, prolateral and dorsal spines weak. Metatarsus IV with five ventral spines. Leg formula 1243. Pedipalp yellowish brown with a single claw, total length slightly shorter than combined length of patella IV and tibia IV.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.40	1.90	3.70	3.50	1.25	13.75
2	3.00	2.00	3.50	2.80	1.10	12.40
3	1.90	1.20	1.50	1.35	0.85	6.80
4	2.90	1.75	3.10	2.60	1.10	11.45
Pedipalp	1.50	0.75	0.90	–	1.60	4.75

Abdomen longer than wide, posteriorly truncate, and moderately pointed anteriorly, yellowish brown, except mottled black submedian area and median area bears four pairs of spherical brown sigilla, gradually reduced in size towards the posterior. Venter blackish brown with a pair of white subglobular spots midlaterally. Spinnerets brownish yellow with a black ring, anterior pair with a large basal segment and a small ovoid to subtriangular terminal segment. Posterior pair transverse and converging. Epigynum with a transverse wide U-shaped sclerotized plate and a large scape emanating from its anterior, with a moderately enlarged apical one half and a dorsal cavity subapically.
Etymology: Named after the vertical spines in a row ('hilira' in Tagalog) in the tibiae.
Natural history: Netted from upland rice at maximum tillering in September.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Caliraya, Manipon Vill., holotype female, 22 September 1985, A.T. Barrion and M. Perez.
Distribution: Philippines.

Genus *Hyposinga* Ausserer

Hyposinga Ausserer, 1871. Venh. Zool. Bot. Ges. Wien 21: 823.

Hyposinga Ausserer is a theridiid-like member of the orb-weaving family Araneidae. It comprises about eight species distributed in the Holarctic, Palaearctic and Ethiopian regions of the world.

Members of the genus are very similar to *Singa* C.L. Koch, 1836. However, *Hyposinga* have PME the largest, MOQ wider behind than in front or rectangular. The epigyne differs from *Singa* and *Araneus* in lacking a scape. Often, the scape is merely covered by a hard transparent structure coming from the male pedipalp. Pedipalp has a large transparent scale attached to the embolar base. During copulation, this scale breaks off and lodges in the epigyne.

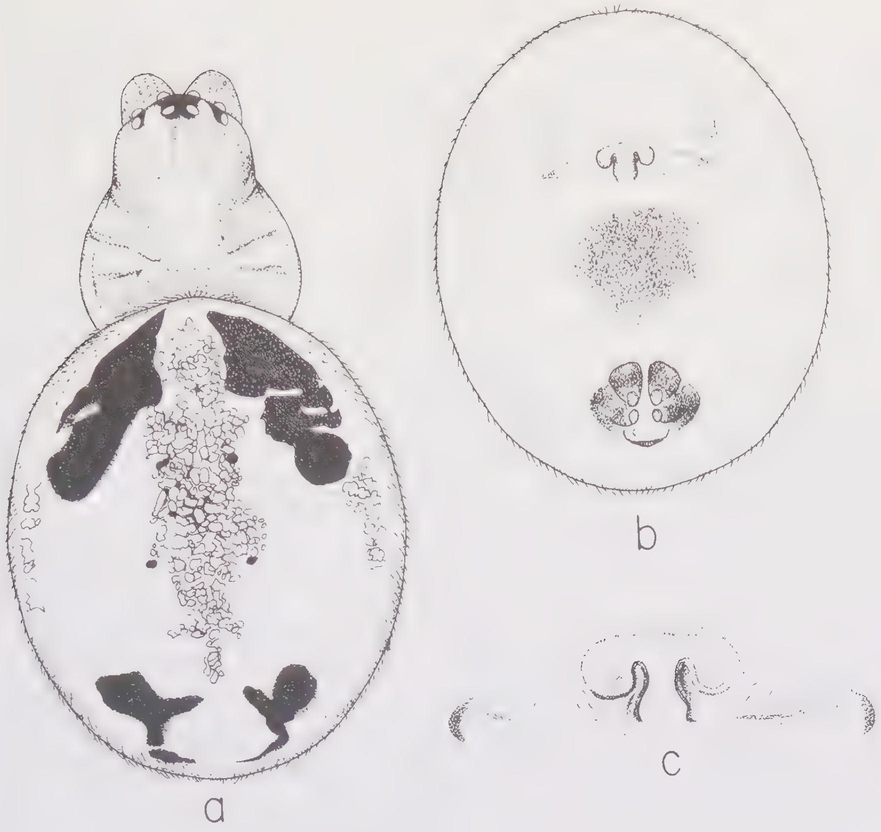


Fig. 383. Female *Hyposinga pygmaea* (Sundevall) (a); abdominal venter (b); and epigynum (c).

Hyposinga pygmaea (Sundevall)
(Fig. 383a–c)

Theridion pygmaea Sundevall, 1831. Vet. Ak. Handl.: 121.
Micryphantes anthracinus C.L. Koch, 1837. Ubers. Arachn. Syst. 1: 11.
Phrurolithus trifasciatus C.L. Koch, 1839. Die Arachn. 6: 116.
Singa trifasciata C.L. Koch, 1845. Die Arachn. 11: 151.
S. anthracina C.L. Koch, 1845. Die Arachn. 11: 154.
Hyposinga pygmaea Ausserer, 1871. Verh. Zool. Bot. Ges. Wien 21: 823.
See Roewer, 1942. Kat. Araneae 1: 875 for further synonymy.

Redescription:
Female: Total length 3.70 mm. Cephalothorax 1.30 mm long, 1.20 mm wide, 1.00 mm high. Abdomen 2.40 mm long, 1.90 mm wide, 1.60 mm high. Cephalothorax yellowish brown with distinctly yellow cephalic area. Eight eyes with black eye margins arranged in groups LE and ME. AE row more recurved than the PE row. Eye diameter (mm): AME = 0.08, ALE = PLE = 0.06, PME = 0.10. Eye separation (mm): AME–AME = 0.08, AME–ALE = 0.09, PLE–PME = 0.10, PME–PME = 0.05. MOQ slightly narrower in front (0.21 mm) than behind (0.23 mm). Clypeus height small, about 0.63 AME diameter. Sternum yellow-brown, as long as wide. Labium and maxillae concolorous with sternum except yellow apex of labium and inner part of maxillae. Chelicerae with four promarginal and three retromarginal teeth. Legs yellow with weak spines. Spination in tibiae I = 1-0-1-0, III = 1-1-0-0 and IV = 1-0-0-0. Metatarsus I/tarsus I = 1.56. Leg formula 1423. Pedipalp yellow, longer than any of femora I–IV, and tarsus bears a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.08	0.45	0.90	0.78	0.50	3.71
2	1.00	0.40	0.80	0.68	0.50	3.38
3	0.73	0.31	0.50	0.48	0.38	2.40
4	1.10	0.43	0.83	0.74	0.38	3.48
Pedipalp	0.35	0.15	0.25	–	0.43	1.18

Abdomen oblongate, longer than wide, with an inverted broad brown red V-band anteriorly and paired spots posteriorly. Median area with a white longitudinal band and an outer one encircling the reddish V-band and spots. Venter yellow with a large reddish brown spot medially and around spinnerets. Epigynum simple, short T-shape in appearance with an anteriorly blunt scape.
Natural history: The single female specimen was collected by an aspirator from an opened hill of lowland irrigated rice in July.

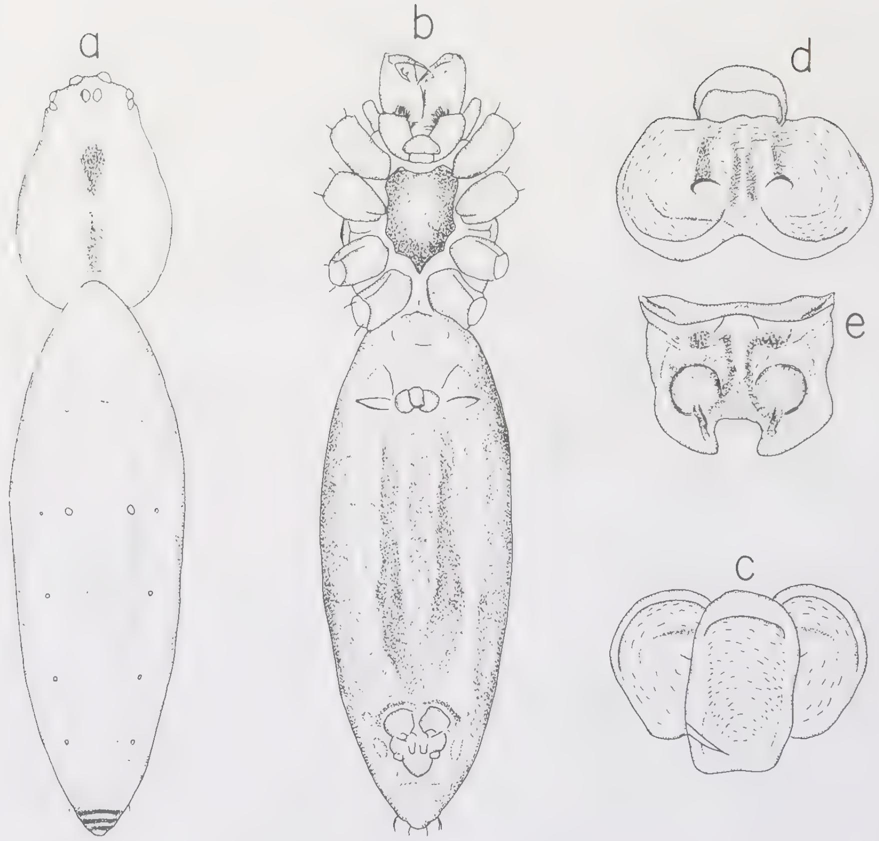


Fig. 384. Female *Larinia fusiformis* (Thorell), dorsal (a) and ventral (b) views; and dorsal with scape (c); dorsal without scape (d), and ventral (e) views of epigynum.

Material examined: THAILAND: Prachinburi Prov., Prachinburi Rice Research (PRRI) Station, one female, 26 July 1989, A.T. Barrion.
Distribution: Holarctic in distribution, newly recorded in Thailand.

Genus *Larinia* Simon

Larinia Simon, 1874. Arachn. de France 1: 115.
Lipocrea Thorell, 1878. Ann. Mus. Civ. Stor. Nat. Genova 13: 6.
Drexelia Mc Cook, 1892. Proc. Acad. Nat. Sci. Philadelph. 1892: 127.
Kilima Grasshoff, 1970. Senckenbergiana Biol. 51: 122–123.
Larinopa Grasshoff, 1970. Senckenbergiana Biol. 51: 226–227.
Siwa Grasshoff, 1970. Senckenbergiana Biol. 51: 409.
Paralarinia Grasshoff, 1970. Senckenbergiana Biol. 51: 411.
Faradja Grasshoff, 1970. Senckenbergiana Biol. 51: 416–417.
Mahembea Grasshoff, 1970. Senckenbergiana Biol. 51: 418.
Lariniaria Grasshoff, 1970. Senckenbergiana Biol. 51: 421.
Larinia Levi, 1975. Bull. Mus. Comp. Zool. 147: 102–105; Patel, 1975. Oriental Ins. 9(1): 111.

Larinia Simon has the cephalothorax longer than wide, hardly convex posteriorly, and with a vertical median fovea. Median ocular quadrangle almost twice as wide in front than behind and forms a trapezium. AME the largest, separated widely, more than one diameter from each other. PME very close to each other. ALE and PLE subcontiguous. Labium wider than long. Sternum longer than wide. Leg formula 1243. Patella of male's pedipalp with two long macrosetae (= spines). Abdomen distinctly longer than wide, with rounded to slightly tapered posterior and anterior ends.

The genus, comprising about 15 species, is widely distributed in the Palaearctic, Ethiopian, Neotropical, Oriental and Australian regions.

Larinia fusiformis (Thorell)
(Figs 384a–e, 385ab)

Meta fusiformis Thorell, 1877. Ann. Mus. Civ. Stor. Nat. Genova 10: 431.
Larinia fusiformis Roewer, 1942. Kat. Aran. 1: 770.
Larinopa fusiformis Grasshoff, 1970. Senckenbergiana Biol. 51: 231–233.

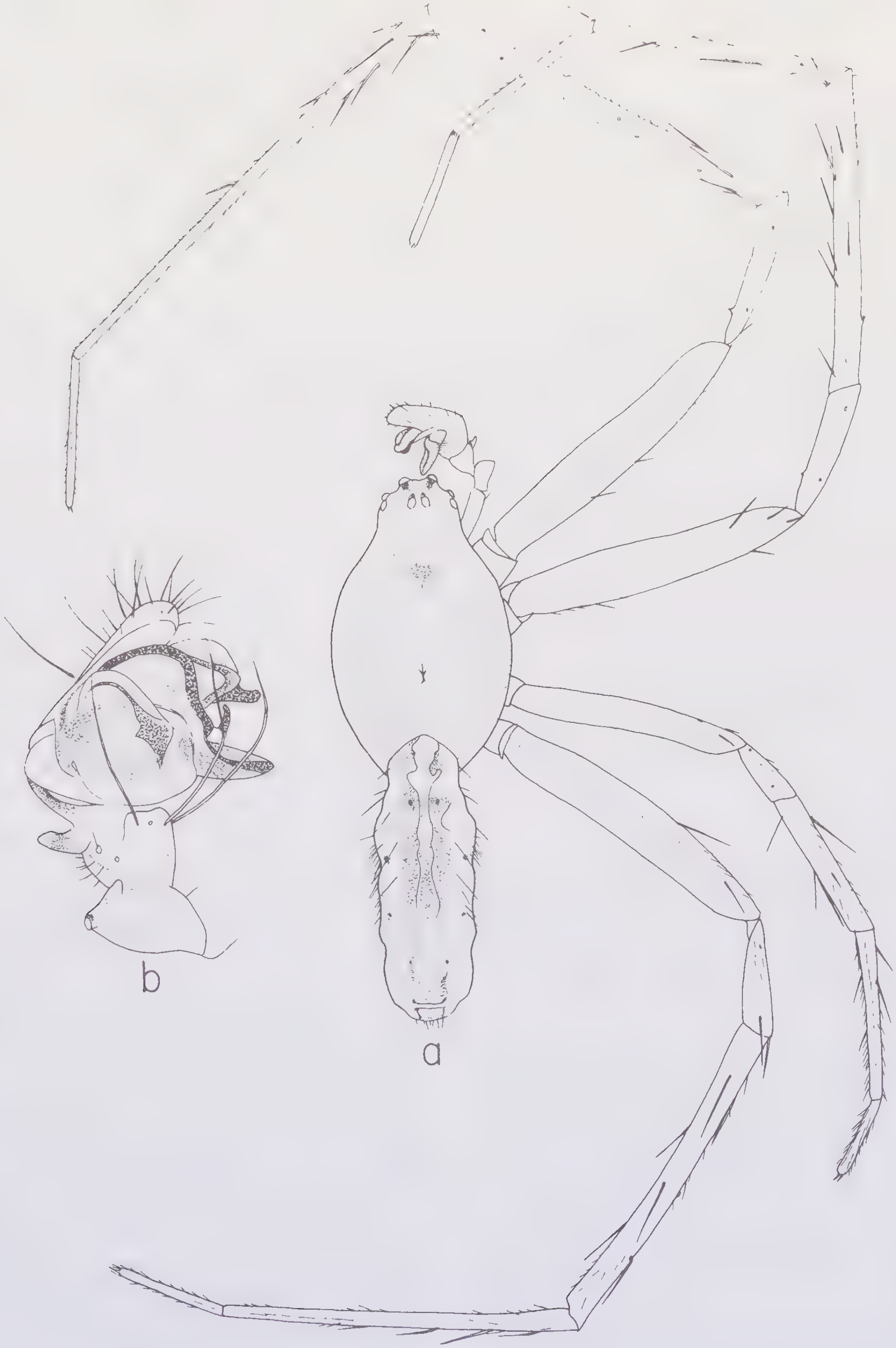


Fig. 385. Male *Larinia fusiformis* (Thorell) (a); and pedipalp (b).

Larinia fusiformis Tanikawa, 1989. Acta Arachnol. 38: 35–36.

Redescription:
Female (Fig. 384a-e): Total length 13.42 mm. Cephalothorax 3.50 mm long, 2.25 mm wide, 1.33 mm high. Abdomen 9.92 mm long, 2.50 mm wide, 3.17 mm high. Cephalothorax yellow-brown with black eye margins and a pale gray longitudinal line posterior to PME running to the fovea, longer than wide, cephalic area distinct from the thoracic area. Eight eyes in two recurved rows, AE more recurved than PE. Eye diameter (mm): AME = 0.16, ALE = PLE = 0.12, PME = 0.08. Eye separation: AME–AME as long as one AME diameter, AME–ALE 1.25 times AME diameter, PME–PME 0.4 AME diameter, PME–PLE 2.5 times AME diameter. Clypeus height small, barely 0.7 AME diameter. Sternum subovate, yellow (grayish brown along margins in some specimens), almost twice longer than wide (1.67 : 0.88 mm), anterior end moderately procurved, and posterior end narrowed to a blunt tip. Labium almost as long as wide, apical one third recurved and yellow, basal two thirds brown. Maxillae brownish yellow with whitish yellow inner margin, longer than wide, with dark brown scopulae. Chelicerae yellow with a gray stripe near a small boss, promargin with four teeth, retromargin with three teeth. Legs yellow, long and slender, with moderately slender spines, tarsi three-clawed with six to eight teeth in each of the superior claws. Pedipalp single-clawed with 10–11 teeth. Leg formula 2413.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.50	1.38	2.42	2.67	0.83	9.80
2	3.92	1.83	4.57	4.33	1.25	15.50
3	2.58	0.92	2.06	1.89	0.78	8.23
4	4.92	1.67	3.75	3.58	0.83	14.75
Pedipalp	1.00	0.46	0.75	–	1.17	3.38

Abdomen pale yellow, four times longer than wide, anterior part overhangs the thoracic area, dorsally with a pair of narrow and broad pale brown longitudinal bands and three or four pairs of brown to black spots. Ventrally pale yellow to chalk-white, with brown epigynum and pair of chalk-white longitudinal narrow bands from epigastric furrow to the lateral sides of spinnerets. Epigynum with a long and apically blunt to rounded scape, and lateral lobe-like margins. Intromittent canal short.
Male (Fig. 385ab): Total length 6.80 mm. Cephalothorax 3.05 mm long, 1.90 mm wide, 1.20 mm high. Abdomen 3.75 mm long, 1.20 mm wide, 1.10 mm high. Cephalothorax yellow, with a longitudinal gray band posterior to PME, becoming a large brown spot between PME and fovea. Very similar to the female except for measurements. Legs yellow with strong spines. Tibia I spination 3-10-3-4. Metatarsus I/tarsus I = 3.70. Leg formula 1243. Pedipalp with a scoop-like median apophysis projecting laterad, terminal apophysis rostriform, and stipes apophysis keel-shaped.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.00	1.80	4.35	5.55	1.50	17.20
2	3.80	1.50	3.60	3.95	1.15	14.00
3	2.60	0.85	1.80	1.70	0.80	7.75
4	4.05	1.15	3.30	3.50	0.85	12.95
Pedipalp	0.80	0.35	0.30	–	1.00	2.45

Abdomen distinctly elongate, yellow, pointed anteriorly and rounded posteriorly, with two transverse brown bands, and bears five pairs of brownish black dots dorsally. Venter chalk-white with brownish U-band towards spinnerets.
Natural history: Four specimens were collected by sweep net, one from lowland irrigated rice in February, one female and one male from upland rice in September in the Philippines, and one from deepwater rice collected in September in Thailand. Another female was caught inside a walk-in UV light in January on the IRRI farm.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, one female, 8 February 1980, A.T. Barrion; one female, 8 January 1980, A.T. Barrion; *Mindanao Is.*, Misamis Oriental Prov., Claveria, Patrocinio Vill., one female and one male, 23 September 1987, A.T. Barrion. **THAILAND:** Prachinburi Prov., Prachinburi Rice Research Institute, one female, 27 September 1989, A.T. Barrion.
Distribution: Japan, Australia, New Guinea, India, Vietnam, Thailand (new record) and Philippines (new record).

Larinia phthisica (L. Koch)
(Figs. 386a–e, 387a–l)

Epeira phthisica L. Koch, 1871. Arach. Austral. 1: 103.
Larinia phthisica Roewer, 1942. Kat. Aran. 1: 771.

Redescription:
Female (Fig. 386a–e): Total length 9.25 mm. Cephalothorax 3.00 mm long, 1.92 mm wide, 1.66 mm high. Abdomen 6.25 mm long, 2.33 mm wide, 3.00 mm high. Cephalothorax straw-colored with a pale longitudinal band from PME to brownish fovea. Eye diameter (mm): AME = 0.17, ALE = 0.14, PME = 0.12, PLE = 0.10. Eye separation (mm): AME–AME = 0.16, AME–ALE = 0.15, ALE–PLE = 0.02, PLE–PME = 0.30, PME–PME = 0.04. MOQ 1.8 times wider in front than behind. Clypeus height small, 0.44 AME diameter. Sternum uniformly yellow, longer than wide. Labium and maxillae typical of the genus. Chelicerae with four promarginal and three retromarginal teeth. Legs uniformly yellow. Spination in tibia I = 3-8-4-4. Metatarsus I/tarsus I = 3.36. Leg formula 1243. Pedipalp yellow, slightly shorter than femur II, and bears a single tarsal claw.

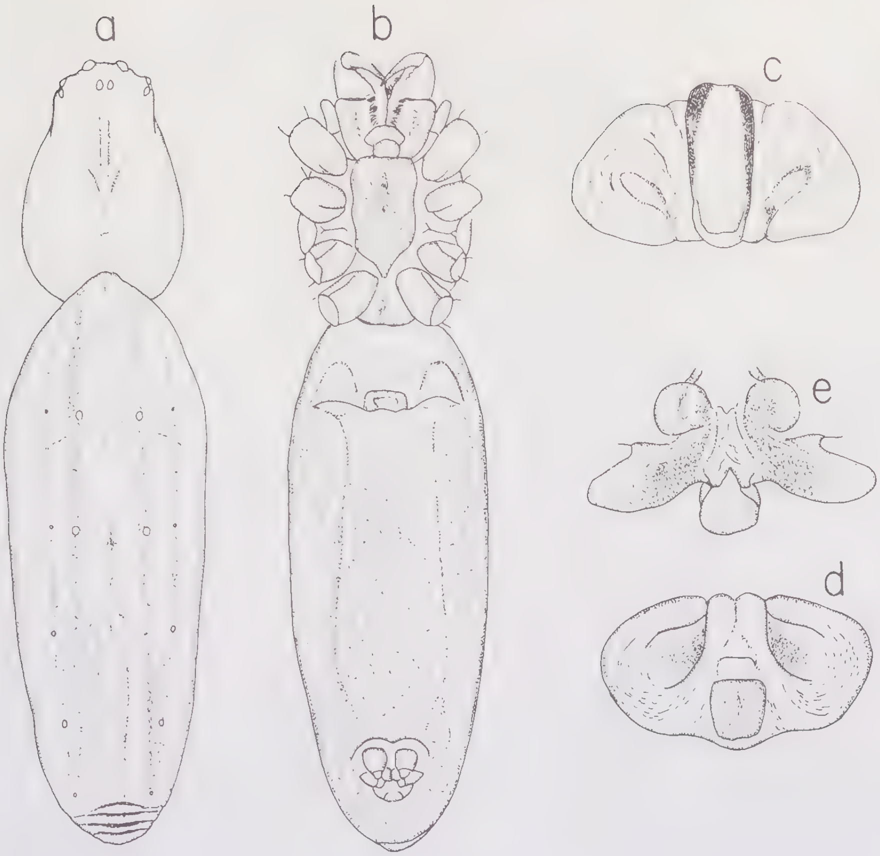


Fig. 386. Female *Larinia phthisica* (L. Koch), dorsal (a) and ventral (b) views; and dorsal with scape (c) dorsal without scape (d), and ventral (e) views of epigynum.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.15	1.55	3.50	3.70	1.10	13.00
2	2.80	1.35	3.15	3.30	1.00	11.60
3	1.85	0.65	1.30	1.40	0.75	5.95
4	3.20	1.10	2.70	3.00	0.80	10.80
Pedipalp	0.80	0.40	0.55	–	1.00	2.75

Abdomen straw-colored, longer than wide, and bears four dorsal light brown spots. Anterior end more pointed than the posterior end. Venter with a white longitudinal median band bordered with brownish band. Epigynum with a wide lateral epigynal margin, longer than wide scape, moderately straight posterior epigynal margin, and short intromittent canal.

Male (Fig. 387a–l): Total length 5.50 mm. Cephalothorax 2.10 mm long, 1.30 mm wide, 1.00 mm high. Abdomen 3.40 mm long, 1.25 mm wide, 1.20 mm high. Cephalothorax with a light brown median longitudinal band posterior to PME up to fovea. Eye diameter (mm): AME = 0.13, ALE = PLE = 0.08, PME = 0.10. Eye separation (mm): AME–AME = 0.16, AME–ALE = 0.08, PLE–PME = 0.18, PME–PME = 0.007. MOQ 1.88 times wider in front than behind. Clypeus height small, 0.58 AME diameter. Sternum yellow, longer than wide, and pointed posteriorly. Chelicerae yellow, promargin and retromargin with three teeth each. Legs uniformly yellow. Femur I with five ventroretrolateral and one prolateral spines. Base of femur with a single ventral spine. Spination in tibia I = 3-7-4-4. Metatarsus I/tarsus I = 3.81. Leg formula 1243. Pedipalp shorter than femur III. Terminal apophysis beak-like. Stipes apophysis spine-like. Cymbium moderately tapered towards the anterior.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.65	1.20	3.30	4.00	1.05	12.20
2	2.70	1.10	2.80	3.20	0.95	10.75
3	1.90	0.50	1.25	1.30	0.65	5.60
4	2.75	0.80	2.35	2.50	0.60	9.00
Pedipalp	0.55	0.20	0.25	–	0.70	1.70

Abdomen uniformly yellow without dorsal and ventral marks except for pale brown transverse bands subposteriorly.

Natural history: Both specimens were collected by sweeping lowland rice.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., one female, 20 July 1981, E. Ferrer; Ifugao Prov., Banawe, one male, 24 October 1979, A.T. Barrion.

Distribution: Japan, New Guinea, India, Vietnam and the Philippines (new record).

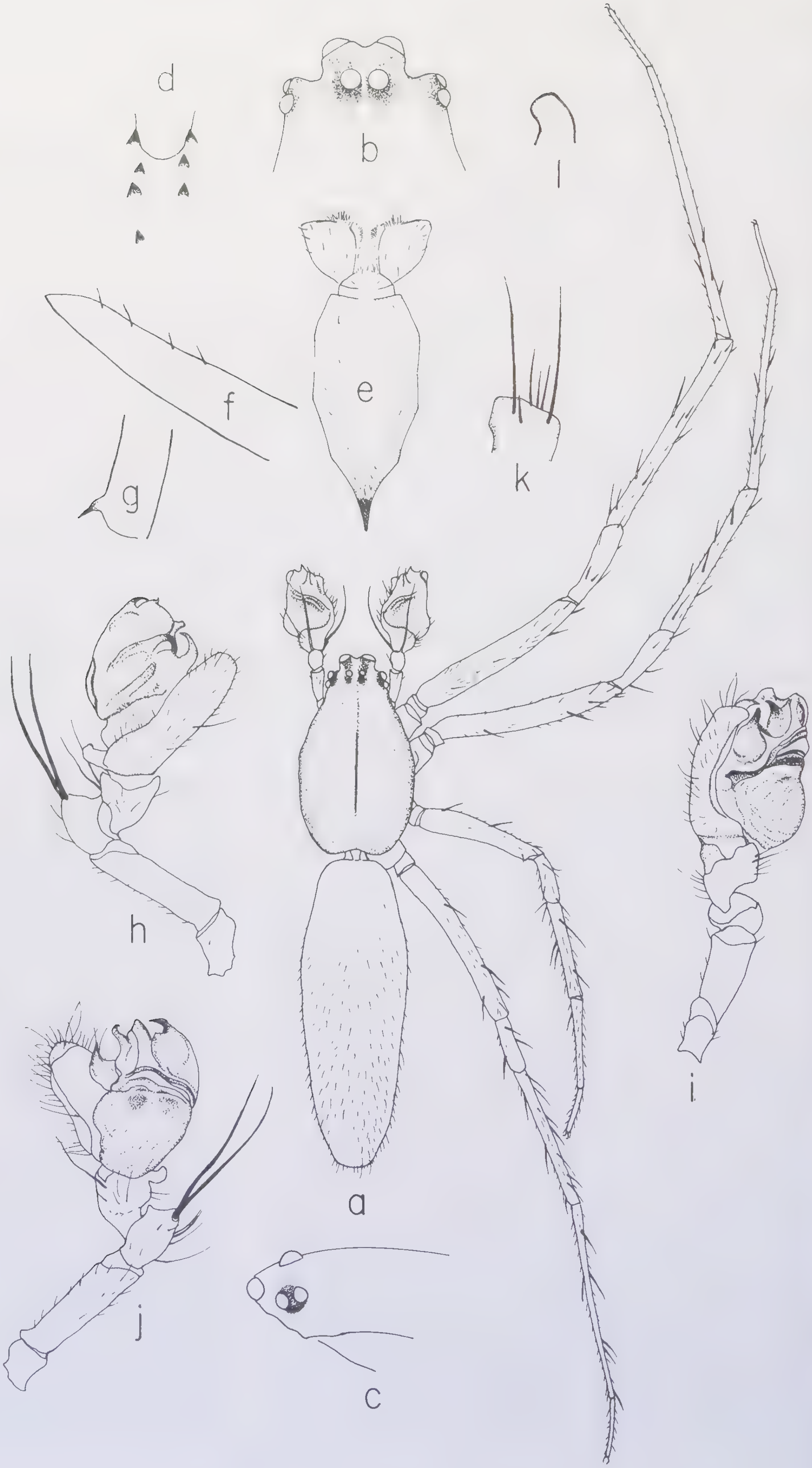


Fig. 387. Male *Larinia phthisica* (L. Koch) (a); dorsal (b) and lateral (c) eye patterns; cheliceral teeth (d); sternum, labium, and maxillae (e); ventroretrolateral side of femur I (f); basoventral part of femur I (g); lateral (hi) and ventral (j) views of pedipalp; portion of pedipalp's tibia (k); and tip of paracymbium (l).

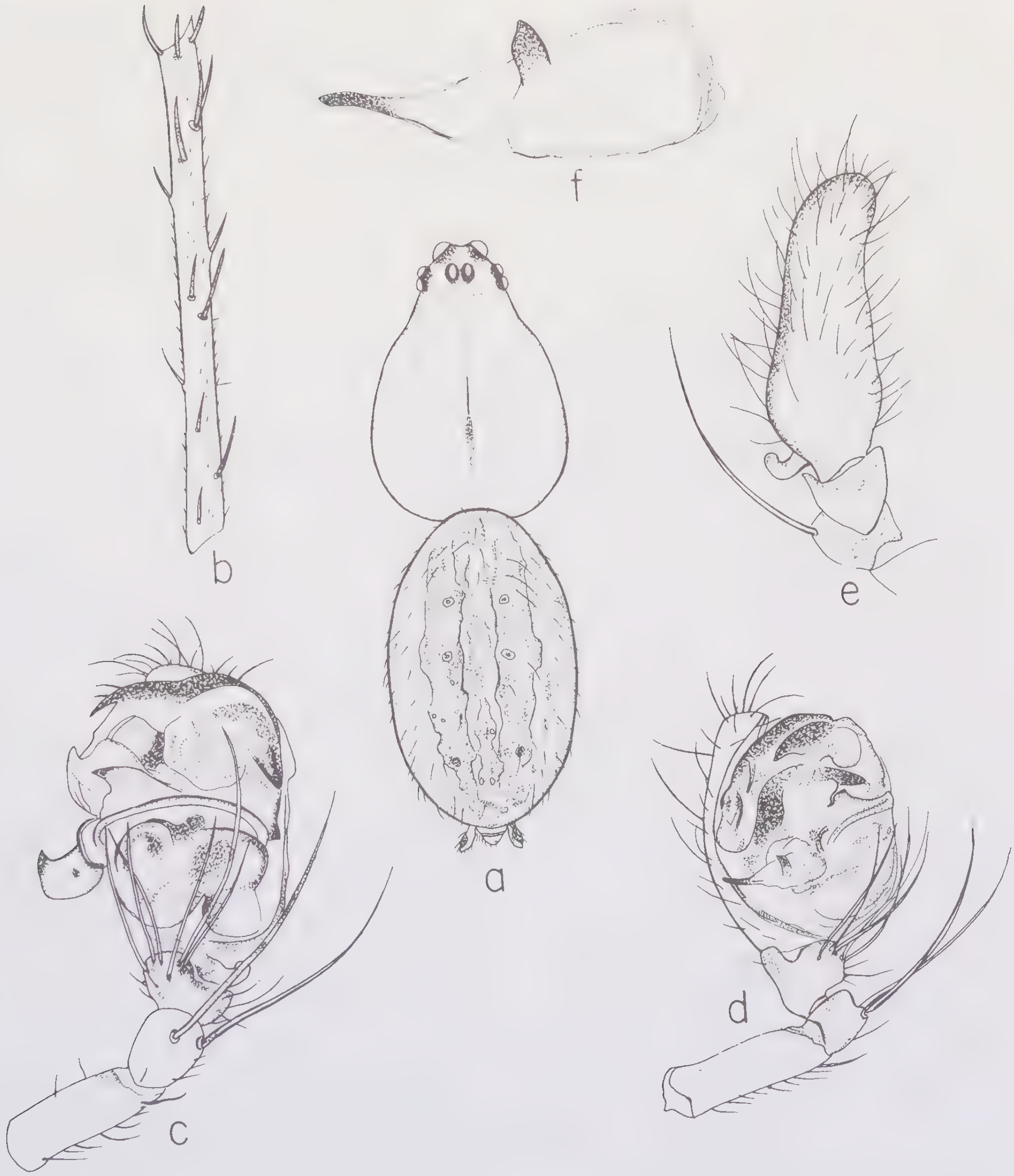


Fig. 388. Male *Larinia parangmata* n. sp. (a); ventrolateral view of tibia I (b); retrolateral (c) and ventral (d) views of pedipalp; entire patella, tibia, and cymbium (e); and median apophysis (f).

Larinia parangmata new species
(Fig. 388a–f)

Description:
Male: Total length 5.20 mm. Cephalothorax 2.40 mm long, 1.50 mm wide, 1.30 mm high. Abdomen 2.80 mm long, 1.45 mm wide, 1.60 mm high. Cephalothorax yellow, with black eye margins and a gray band from fovea to PME, becoming trifid on the cephalic and thoracic border, narrowed towards cephalic area and wide in the thoracic area. Eight eyes in two recurved rows, strongly recurved AE shorter than less recurved PE row. Eye diameter (mm): AME = 0.19, ALE = 0.13, PME = PLE = 0.10. Eye separation (mm): AME–AME = 0.15, AME–ALE = 0.06, LE contiguous, PLE–PME = 0.20, PME–PME = 0.04. MOQ-AW 1.8 times wider than MOQ-PW, and 1.33 times more than length (0.30 mm). Clypeus height small, ca. one third AME

diameter. Sternum yellow with patches, longer than wide, and pointed posteriorly between coxae IV. Labium wider than long, basal one half yellowish gray, and apical margin yellow. Maxillae yellow in promarginal one third and grayish yellow in the rest. Chelicerae vertical, yellow with pale yellow-brown fang. Promargin with four teeth and three in the retromargin. Legs yellow, with gray tinge in femur I. Spination in femur I = 4-0-3-2, venter with small teeth in one longitudinal row, tibia I = 3-8-4-4, metatarsus I = 1-4-1-1. Metatarsus I/tarsus I = 3.29. Leg formula 1243. Pedipalp a little longer than femur III. Paracymbium moderately curved upwards apically. Median apophysis broadly bifid, one process short and thick and the other slender with a membranous base. Embolus short but thick. Base of terminal apophysis with wart-like portions of ejaculatory ducts. Cymbium yellow and longer than wide.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.65	1.10	2.90	3.45	1.05	11.15
2	2.50	0.90	2.40	2.80	0.95	9.55
3	1.60	0.55	1.20	1.10	0.60	5.05
4	2.30	0.70	1.80	2.35	0.80	7.95
Pedipalp	0.50	0.25	0.20	–	0.75	1.70

Abdomen elongate, brown, with two pairs of longitudinal white thin bands medially and a pair of spherical brown spots in apical one third, anterior end slightly tapered, with a brown spot.

Etymology: Named after brown eye-like spots in abdomen.

Natural history: All specimens were collected from kerosene light trap in January.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 9 January 1985, A.T. Barrion; two male paratypes and one male without abdomen, same data as holotype.

Distribution: Philippines.

Genus *Neoscona* Simon

Neoscona Simon, 1864. Hist. Nat. des Araign. 1: 261.
Chinestela Chamberlin, 1924. Proc. U.S. Natn. Mus. 63(13): 20.
Cubanella Franganillo, 1926. Bollan. Soc. Ent. Esp. 9: 69.
Neoscona Comstock, 1940. Spider Book: 509.
Eirovixia Archer, 1951. Am. Mus. Novit. 1487: 34.
Neocanapsin Archer, 1951. Natur. Hist. Misc. Chicago Acad. Sci. 84: 3.
Neoscona Yaginuma, 1960. Spiders of Japan in Color: 56–57.

Members of the genus *Neoscona* have a longitudinal thoracic groove in the cephalothorax. Median ocular quadrangle slightly longer than wide, forming a trapezium. AME the largest or subequal in diameter to the PME. Lateral eyes close to each other and not borne on prominent tubercles. PLE the smallest. AE and PE recurved. Coxa I of male with a ventral hook in the distal rim. Tibia II with strong prolateral spines. Abdomen variable in shape – ovoid, subovoid, triangular, or subtriangular. Epigynum simple and tongue-like, scape completely fused to the base and bears one or two pairs of lateral lobes. Epigynal openings underneath the scape. Patella of male's pedipalp with two strong, curved, and long spines. Cymbium of male's pedipalp broad.

Neoscona is common throughout the different regions of the world.

Neoscona dostinikea new species
(Fig. 389a–g)

Description:

Male: Total length 5.0 mm. Cephalothorax 2.20 mm long, 2.00 mm wide, 1.30 mm high. Abdomen 2.80 mm long, 2.20 mm wide, 1.60 mm high. Cephalothorax yellowish brown with fine tinge of gray. Fovea distinctly longitudinal and brown. Eight eyes in two recurved rows, AE more recurved than PE row. Eye diameter (mm): AME = 0.18, PME = 0.14, ALE = PLE = 0.10. Eye separation (mm): AME–AME = 0.20, AME–ALE = 0.11, PME–PME = 0.10, PME–PLE = 0.20. MOQ 1.43 times wider in front than behind, a long spine between AME and PME, PME and LE, two each behind PME and PLE. Clypeus height 0.55 AME diameter. Sternum longer than wide, yellow except dark brown margins and a broken white median T-band. Labium and maxillae as in the genus. Chelicerae vertical, yellow except brownish fang. Promargin with four and retromargin with three teeth. Legs yellow except grayish brown apices of segments. Spination in venter of femora I = 4, II = 5, III = 0, and IV = 4–5. Tibia II of left leg with two strong prolateral and two ventral spines at midlength. Prolateral spine absent in right leg of tibia II in one specimen. Metatarsus I/tarsus I = 2.50. Leg formula 1243. Pedipalp slightly shorter than femur IV. Patella with two long spines. Median apophysis anchor-like, with a spine prolaterally and a large blunt tooth retrolaterally.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	0.80	2.20	2.25	0.90	8.75
2	2.20	0.70	1.50	1.90	0.75	7.05
3	1.25	0.55	0.85	0.90	0.55	4.10
4	1.85	0.75	1.50	1.60	0.60	6.30
Pedipalp	0.45	0.20	0.20	–	0.85	1.70

Abdomen subglobular, white with a black circular marginal ring and network-like gray marks dorsally, becoming dark and prominent posteriorly. Subposterior end with four large black spots in a transverse row. Venter white except a hairy brown area anterior to

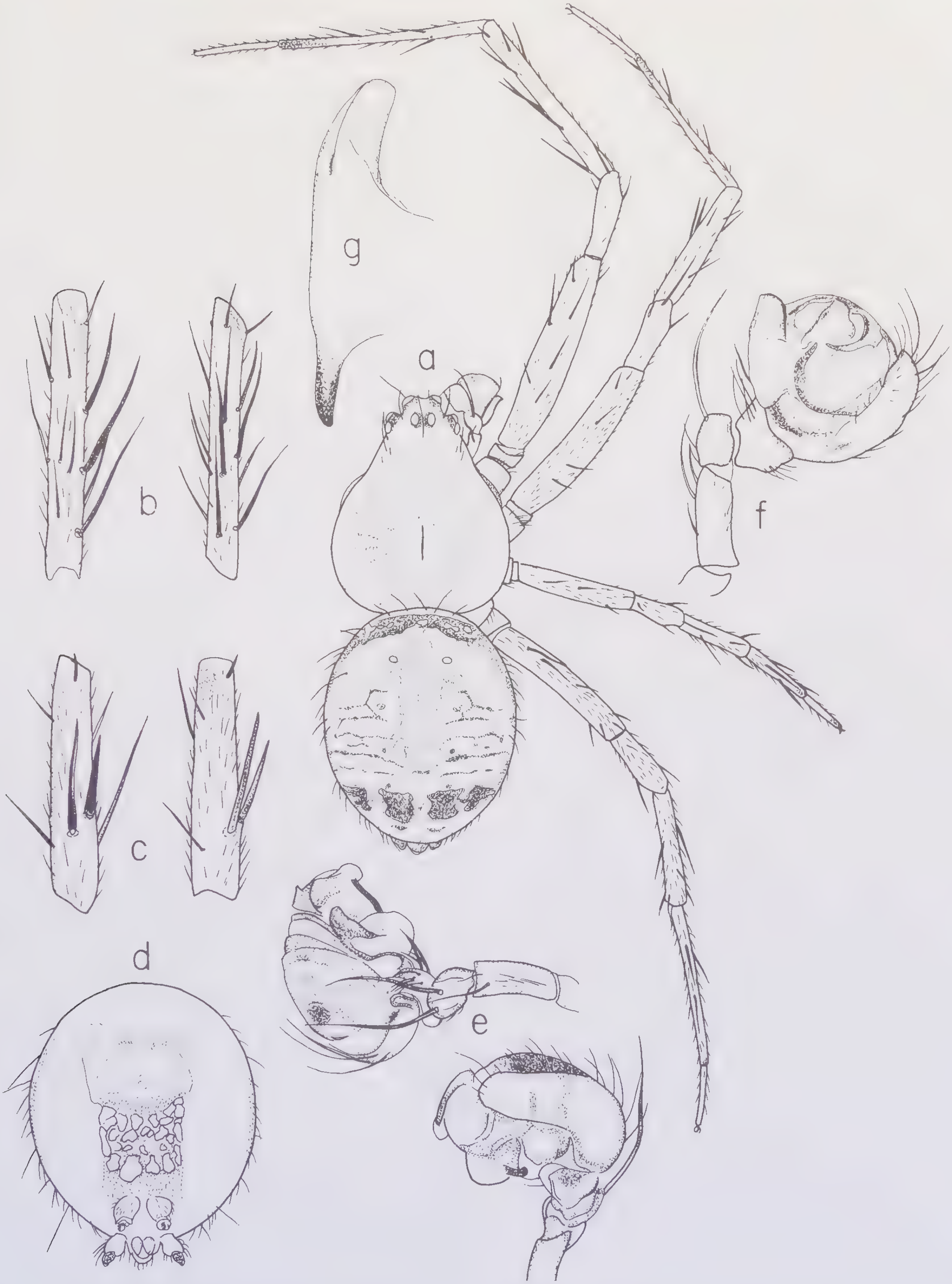


Fig. 389. Male *Neoscona dostinikea* n. sp. (a); dorsal and lateral views of tibiae I (b) and II (c); abdominal venter (d); retrolateral (e) and ventral (f) views of pedipalp; and median apophysis (g).

epigastric furrow. Posterior and anterior spinnerets strongly diverge and median spinnerets longitudinal.

Etymology: Named after the two spines in the prolateral of tibia II.

Natural history: Four specimens were collected from kerosene light traps set close to an upland ricefield in July to December.

Material examined: PHILIPPINES: *Luzon Is.*, Quezon Prov., Real, Llavac Vill., holotype male, 24 July 1985, M. Perez and A.T. Barrion; one paratype male, same locality as holotype, 6 August 1985, M. Perez; two paratype males, 12 December 1985, A.T. Barrion and R. Apostol.

Distribution: Philippines.

Neoscona yptinika new species

(Fig. 390a–l)

Description:

Male: Total length 10.55 mm. Cephalothorax 5.72 mm long, 4.56 mm wide, 2.68 mm high. Abdomen 4.83 mm long, 4.39 mm wide, 3.12 mm high. Cephalothorax brown to reddish, cephalic area protruded forward, placing AME on a tubercle, and thoracic area wide with two broad lateral reddish brown bands. Fovea dark brown, long, and longitudinal. Eye region with long setae in between eyes and posterior of PLE. Eight eyes in two recurved rows and margins black. Eye diameter (mm): AME = 0.24, ALE = PME = 0.20, PLE = 0.16. Eye separation: AME–AME = AME–ALE = 1.5 times eye diameter, PME–PME 0.5 AME diameter, PME–PLE 3.4 times PME diameter. MOQ 1.4 times wider in front than behind. Clypeus height as long as one AME diameter. Sternum yellow, with brownish margin and outgrowths between coxae, apex of sternum opposite coxae I almost cut at right angle. Labium light brown with yellow apical margin. Maxillae longer than wide, inner margin close to scopulae yellow. Chelicerae strong, with a distinct boss, promargin with four teeth and retromargin with three teeth. Legs long and strong, reddish brown, except yellow posterior one half of femora III and IV, apex of coxa I on the retromarginal side with a tooth, femoral spination: I = 7-11-1-4, II = 4-12-3-5, III = 7-6-1-0, IV = 7-8-2-3, and tibial spination: I = 4-12-3-5, II = 5-5-1-3 plus 51–65 short prolateroventral teeth, III = 5-8-43, IV = 4-9-4-3. Tarsi three-clawed, superior claw with four strong teeth. Leg formula 1243. Pedipalp reddish brown, femur longer than wide and broadest posteriorly, terminal apophysis teeth ca. as long as its diameter, and its body slightly rectangular, conductor with two subbasal teeth, median apophysis moderately sickle-shaped towards apex.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.56	2.33	4.56	4.44	1.50	18.39
2	5.00	1.83	3.89	3.78	1.28	15.78
3	3.44	1.60	1.89	2.17	1.06	10.16
4	5.00	1.67	3.39	4.00	1.17	15.23
Pedipalp	0.88	0.48	0.44	–	1.36	3.16

Abdomen brown, with chalk-white irregular flecks, ovate to subovate, clothed with long white hairs, cardiac area with a solid reddish brown triangular band. Subdorsal margin with zigzag brown bands, bordered with white, creating a Christmas tree-like folium that tapers posteriorly. Venter of abdomen light brown with a transverse chalk-white band below the epigastric furrow and anterior to the spinnerets, and with a pair of lateral large globular chalk-white spots between the two bands. Spinnerets uniform in size.

Etymology: The name *yptinika* was derived from the yellow pan trap (YPT) and the Tagalog word 'tinik' for spines.

Natural history: The holotype male was separated from the YPT catch consisting of leafhoppers and planthoppers in September, and the paratype was collected from a pile of rice stubble, also in September.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Siniloan, Magsaysay Vill., holotype male, 20 September 1984, A.T. Barrion; *Palawan Is.*, Iwahig, Iwahig Penal Colony Vill., one paratype male, 27 September 1987, A.T. Barrion.

Distribution: Philippines.

Neoscona usbonga new species

(Figs 391a–j, 392a–g)

Redescription:

Male (Fig. 391a–j): Total length 11.30 mm. Cephalothorax 5.60 mm long, 4.25 mm wide, 3.20 mm high. Abdomen 5.70 mm long, 4.10 mm wide, 3.15 mm high. Cephalothorax brownish yellow with black eye margins. Fovea long, dark brown to black, longitudinal fovea as long as PE row. Cephalic area prominently narrower than thoracic area, posterolaterals of PLE bear four or five long spines and a long pair at midlength of MOQ length. Eight eyes in two recurved rows, strongly recurved AE row slightly shorter than PE row. Eye diameter (mm): AME = 0.25, ALE = 0.20, PME = 0.18, PLE = 0.13. Eye separation (mm): AME–AME - 0.30, AME–ALE = 0.39, PME–PME = 0.10, PME–PLE = 0.55. ALE–PLE contiguous. MOQ-AW 1.66 times wider than MOQ-PW, and 1.26 times more than length. Clypeus height very small, ca. one fifth AME diameter. Sternum prominently longer than wide, yellowish white with brown margins, indented apicolaterally, strongly concave for the labium base anteriorly, narrowed posteriorly between coxae IV and expanded beyond coxae IV towards pedicel. Labium yellowish brown, except yellow apical one fourth, longer than wide. Maxillae longer than wide, in dorsal view, narrowed basally and broadly rounded anteriorly, brown except yellow inner one third. In lateral view, anterolaterals of maxillae swollen, forming a tubercle opposing the tubercle of pedipalp's femur. Chelicerae yellowish brown, vertical, narrowed towards fang, and wide basally, with a swollen process frontobasally. Promargin with five teeth, subbasal tooth the largest. Retromargin with two teeth in right chelicera and three in the left. Legs brown and

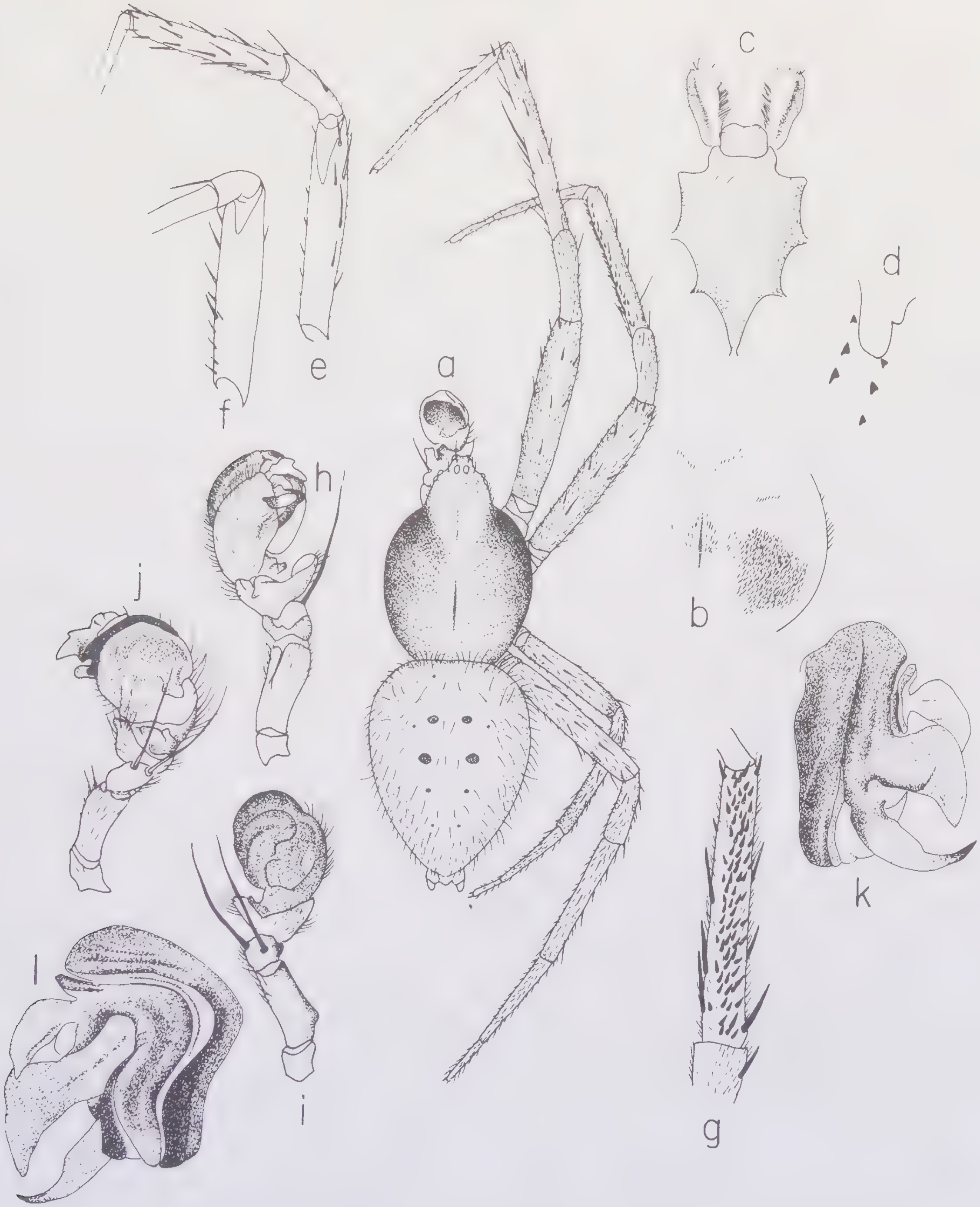


Fig. 390. Male *Neoscona yptinika* n. sp. (a); part of cephalothorax (b); sternum, labium, and maxillae (c); cheliceral teeth (d); ventral view of leg I (e); femur (f) and tibia (g) of leg II; lateral (hi) and ventral (j) views of pedipalp; and lateral (kl) views of palpal apophysis.

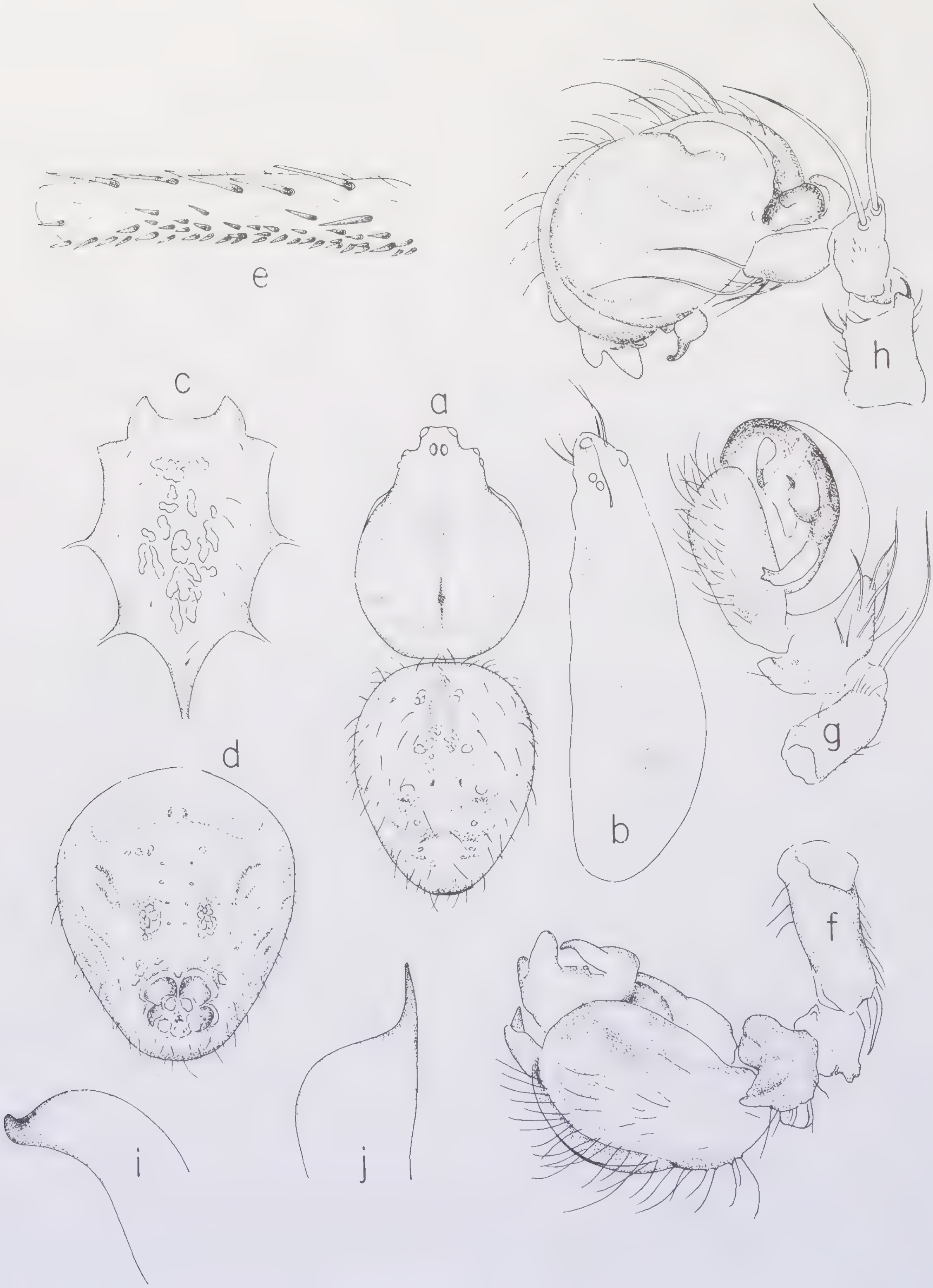


Fig. 391. Male *Neoscona usbonga* n. sp. (a); lateral view of cephalothorax (b); sternum (c); abdominal venter (d); tibia II (e); lateral (fg) and ventral (h) views of pedipalp; median apophysis (i); and terminal apophysis (j).

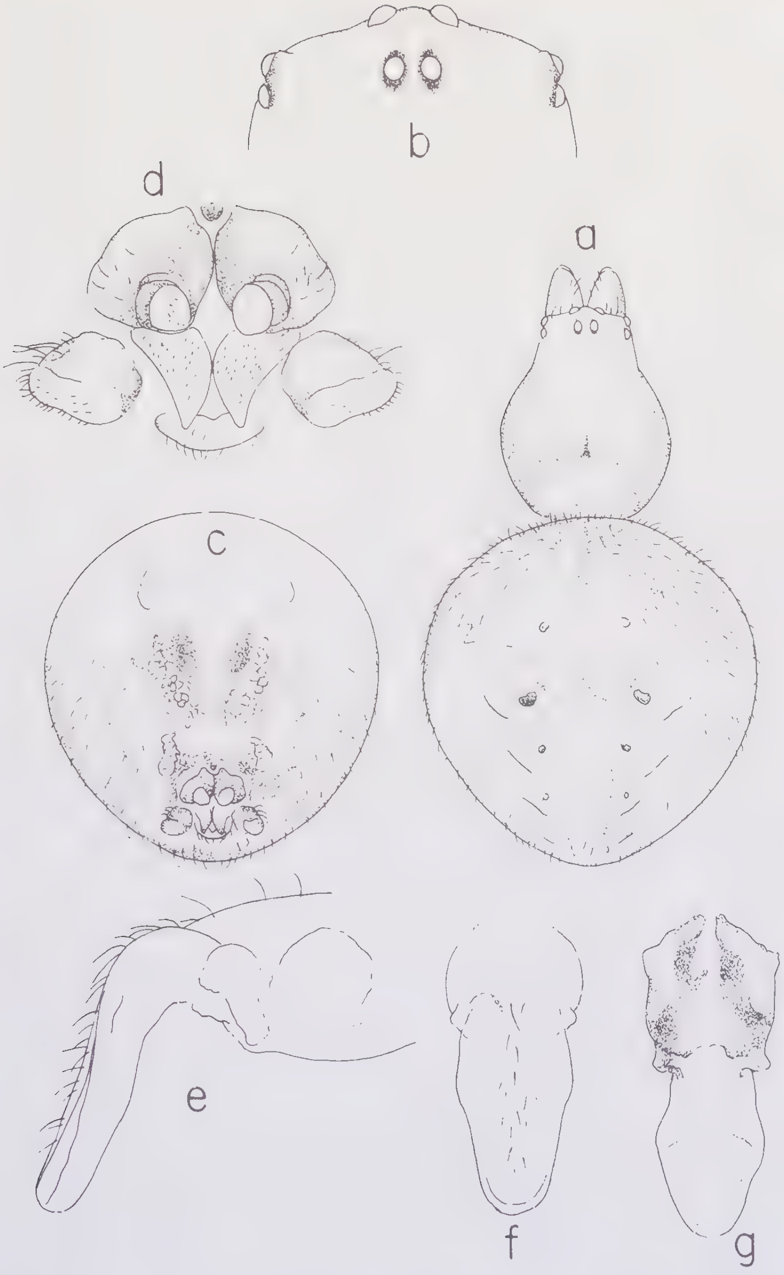


Fig. 392. Female *Neoscona usbonga* n. sp. (a); eye pattern (b); abdominal venter (c); spinnerets' arrangement (d); and lateral (e), dorsal (f), and ventral (g) views of epigynum.

spinous. Spination in femur I = 4-10/11-5/7-3, tibia I = 4-12(2-1-2-1-2-1-1-2)-4-3 in left and 2-11(2-2-1-2-1-1-2)-4-3 in the right. Basoprolaterals of femur II with an oblique sclerotized ridge. Tibia II with 62 peg-like spines prolateroventrally in left leg and and five strong dorsal spines. Metatarsus I/tarsus I = 2.93. Leg formula 1423. Pedipalp brown, with reddish brown cymbium, ca. 0.6 length of femur I. Paracymbium inverted sigmoid shape dorsally. Tibia extended prolaterally and retrolaterally. Median apophysis a large structure with a small apical tooth and a large blunt ventral tooth at its tip. Tegular process slender and pointed apically. Tegulum large. Terminal process moderately large with a black pointed tip and a spur towards anterobasal portion. Cymbium brownish red, with a yellow apex, longer than wide.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.80	2.15	4.30	4.10	1.40	16.75
2	4.50	1.90	3.20	3.70	1.30	14.60
3	3.30	1.40	2.00	2.20	1.00	9.90
4	4.60	1.90	3.50	3.90	1.15	15.05
Pedipalp	0.70	0.40	0.50	–	1.25	2.85

Abdomen dull brown, ovoid, with numerous whitish yellow setae and four pairs of spherical brown spots arranged in two longitudinal rows, anterior two pairs larger than the other two. Abdominal folium inverted tree-like with cardiac brown band as base. Laterals of abdomen lined with gray to black striae and a large white spot adjacent to spinnerets. Book lungs each with about 16 brownish striae. Abdominal venter with a transverse whitish yellow band posterior to epigastric furrow and a pair of large whitish yellow spots between band and spinnnerets. Median area with eight brown spherical spots in four transverse rows. Spinnerets as in the genus.

Female (Fig. 392a–g): Total length 12.80 mm. Cephalothorax 4.20 mm long, 4.00 mm wide, 3.30 mm high. Abdomen 8.60 mm long, 8.40 mm wide, 6.20 mm high. Cephalothorax reddish brown with a yellow median band and black eye margins. Cephalic area distinct from thoracic area, clothed with whitish yellow hairs. Eight eyes in two recurved rows, AE more recurved than PE row. Eye diameter (mm): AME = 0.23, ALE = PME = 0.20, PLE = 0.15. Eye separation (mm): AME–AME = 0.26, AME–ALE = 0.58, PLE–PME = 0.75, PME–PME = 0.13, PLE–ALE = 0.04. MOQ-AW 1.37 times longer than MOQ-PW, and about as long as width. Clypeus height 1.15 times AME diameter. Sternum longer than wide, brown except median yellow band. Labium and maxillae as in male. Chelicera brown with reddish brown fang. Promargin with four teeth and retromargin with three teeth. Legs yellow-brown with brown apical one half or one third of each segment. Spination in femur I = 4-6-7-4 in right leg, tibia I = 4-12-4-5, metatarsus I = 2-12-1-2. Tibia II as long as metatarsus II. Metatarsus I/tarsus I = 3.04. Leg formula 1243. Pedipalp as long as femur I, tarsus with a single claw.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	5.00	2.40	4.40	4.25	1.40	17.45
2	4.60	2.30	4.00	4.00	1.50	16.40
3	3.35	1.50	2.10	2.00	1.00	9.95
4	5.05	2.00	3.50	3.60	1.10	15.25
Pedipalp	1.45	0.75	1.00	–	1.80	5.00

Abdomen ovoid, shape of folium similar to male, with four pairs of brown spots, median pair the largest and ovoid. Venter yellowish brown with a subrectangular white band enclosing three pairs of brown spots in two longitudinal rows between epigastric furrow and spinnerets. Side of anterior spinnerets with a large oblong yellowish white spot. Anterior spinnerets reddish brown, nearly vertical and parallel to each other, median pair subtriangular with a sharply pointed apex directed posteriorly, passing the inner laterals of the transverse posterior pair. Apex of the posterior spinnerets transversely elongate with a moderately large apicomedian spherical structure. Basal segments of posterior spinnerets each bear ca. six or seven long, black setae laterally. Epigynum bears a longer than wide scape, with its apex strongly rounded and sclerotized, median area slightly grooved and lined with black hairs, broad at about midlength and constricted basally, inner part with a pair of reddish brown sclerotized tubercles. Spermathecae globular.

Etymology: Named after the swollen ('usbong' in Tagalog + a) frontobasal part of chelicerae.

Natural history: The two specimens (one male and one female) were vial-tapped from rice panicles in October.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Or. Prov., Claveria, Hinaplanan Vill., holotype male, 9 October 1985; paratype female, 11 October 1985, same locality as holotype.

Distribution: Philippines.

Neoscona oriemindoroana new species
(Fig. 393a–f)

Description:

Male: Total length 9.66 mm. Cephalothorax 4.72 mm long, 3.61 mm wide, 2.44 mm high. Abdomen 4.94 mm long, 4.06 mm wide, 3.33 mm high. Cephalothorax brown, with a broad dark red-brown longitudinal band laterally, cephalic area porrect with AME on a prominent tubercle viewed laterally. Fovea black, long, and longitudinal, ca. 0.4 width of cephalothorax. Eight eyes in two recurved rows, all homogeneous and clear. AE more strongly recurved than PE but shorter than the latter in length. Midintereye space between ME and posterior of PLE with a strong and long seta. Moderately long white hairs present posterior to PLE. Eye diameter (mm): AME = 0.24, PME = ALE = 0.16, PLE = 0.14. Eye separation: AME–AME 0.7 AME diameter, AME–ALE 1.2 times AME or 1.8 times ALE diameter, PME–PME 0.4 eye diameter, PME–PLE four times PLE diameter. Clypeus height very small, one third AME diameter. Sternum yellowish brown, lateral extensions present between coxae and apex opposite coxae I, notched to receive coxae I. Labium longer than wide, same color as sternum except yellow apical margin. Maxillae same color as labium, longer than wide, widely separated, and yellowish in the inner-lateral margins, with scopulae. Chelicerae moderately long, longer than wide, boss well developed, promargin with four alternating small and large teeth and retromargin with three teeth. Legs long, brown, except basal one half of femora III and IV, tibiae I and II with alternating yellow and gray bands, III and IV yellow, except gray-brown apices, metatarsi and tarsi yellow. Femoral spination: I = 5-7-4-3, II = 8-13-6-2, III = 3-5-3-2, IV = 5-5-2-4. Tibial spination: I = 4-11-3-3, II = 4-2-1-2 (plus 29 prolateroventral teeth), III = 2-5-2-2, IV = 3-4-3-3. Tarsi three-clawed, superior claws each with six to eight teeth. Leg formula 1243. Tegular apophysis sharp and tooth-like, conductor tip blunt and has a single tubercle basally, median apophysis tip blunt on one side and with a tooth on the other end.

Abdomen ovate, yellowish brown with chalk-white Christmas tree-like folium and long yellow hairs. Five pairs of sigilla, all globular except the ovate largest pair subapically. Venter yellow-brown, brown along epigastric furrow, and with a pair of subglobular chalk-white spots anterior to the spinnerets.

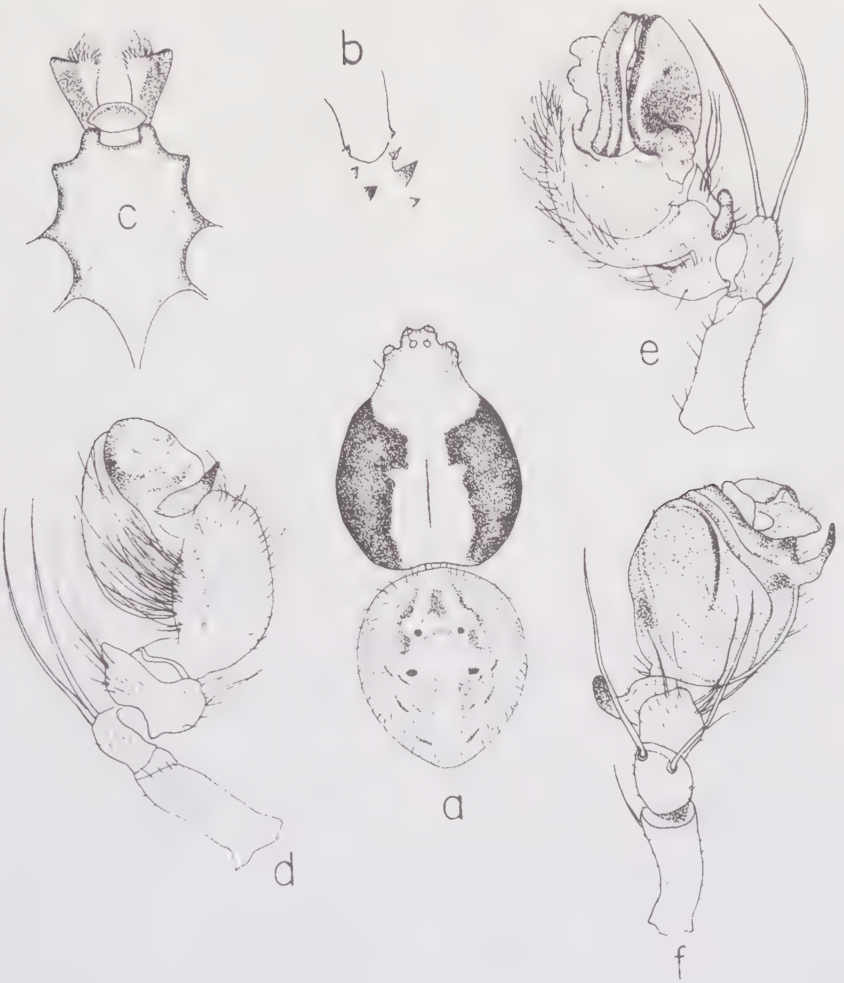


Fig. 393. Male *Neoscona oriemindoroana* n. sp. (a); cheliceral teeth (b); sternum, labium, and maxillae (c); lateral (de) and ventral (f) views of pedipalp.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.94	2.22	4.22	3.94	1.36	16.68
2	4.44	1.58	3.67	3.61	0.83	14.13
3	3.06	1.17	1.78	1.94	0.75	8.70
4	4.22	1.67	3.17	3.44	0.83	13.33
Pedipalp	0.76	0.38	0.26	–	1.20	2.60

Etymology: The specific epithet *oriemindoroana* was derived from the type locality.

Natural history: Two males were handpicked from the ripened panicle of rice ready to be harvested in August.

Material examined: PHILIPPINES: *Mindoro Is.*, Oriental Mindoro, San Jose, San Jose Red Baron Area, holotype male, 20 August 1982, A.T. Barrion; one male paratype, same data on holotype.

Distribution: Philippines.

Neoscona theisi (Walckenaer)
(Figs 394a–e, 395a–d)

Epeira theis Walckenaer, 1841. Hist. Nat. Ins. Apt. 2: 53.

E. mangareva Walckenaer, 1847. Hist. Nat. Ins. Apt. 4: 469.

E. braminica Stoliczka, 1869. J. Asiat. Soc. Bengal 38(2): 238.

E. theisis Thorell, 1877. Annali, Mus. Civ. Genova 10: 390.

E. obscura Rainbow, 1897. Mem. Aust. Mus. 3(2): 116.

Neoscona theisi F.O.P. Cambridge, 1904. Biol. Cent. Am. Aran. 2: 470.

Araneus theisi Merian, 1911. Zool. Jb. (Syst.) 31(2): 213.

A. theisi Saito, 1939. Saito Ho-onkai Mus. Res. Bull. 18: 22.

A. theisi Chrysanthus, 1960. Nova Guinea Zool. 10: 39.

Neoscona theisi Barrion and Litsinger, 1981. Philipp. Entomol. 5(1): 161.

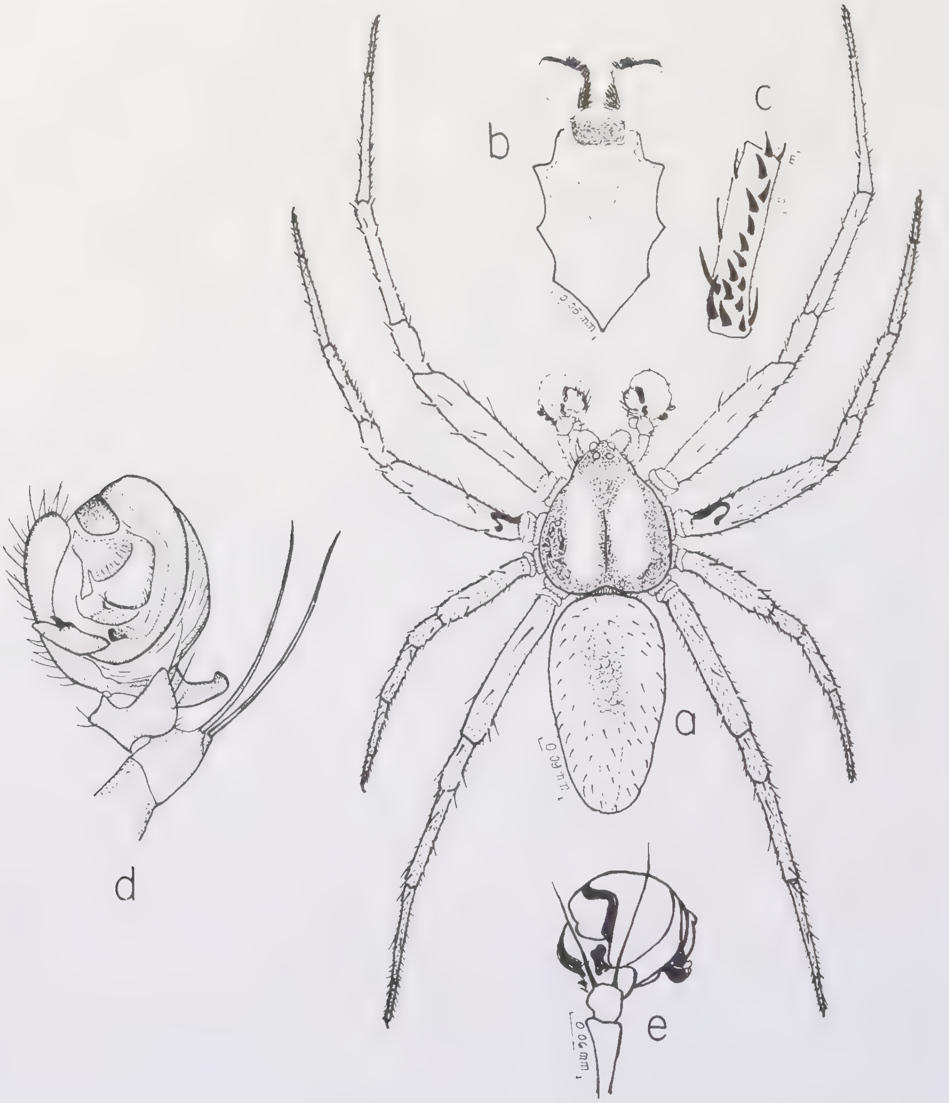


Fig. 394. Male *Neoscona theisi* (Walckenaer) (a); sternum, labium, and maxillae (b); lateral view of tibia II (c); and lateral views of pedipalp (de).

Redescription:
Male (Fig. 394a–e): Total length 6.68 mm. Cephalothorax 3.08 mm long, 2.33 mm wide, 1.50 mm high. Abdomen 3.58 mm long, 2.42 mm wide, 1.40 mm high. Cephalothorax yellow-brown, with median and submedian longitudinal brown bands, and cephalic area narrower than the thoracic area. Eight eyes in two recurved rows. AE more recurved than PE row. Eye diameter (mm): AME = 0.18, PME = 0.13, ALE = PLE = 0.10. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.23, PLE–PME = 0.35, PME–PME = 0.08. MOQ 1.38 times wider in front than behind. Clypeus height very small, barely one third AME diameter. Sternum brownish yellow with a white median band. Labium and maxillae typical of the genus. Outer apical edge of each maxillae with a tooth or spur corresponding to the spur at base of pedipalp's femur. Chelicerae vertical, with four promarginal and three retromarginal teeth. Legs yellowish brown, spinous, and slender. Coxa I bears a ventroapical tooth. Venter of femur I with zero or one spine, II = 12, III = 4, and IV = 6, all in a row. Tibia II with 12–14 prolateral spines. Leg formula 1423. Pedipalp slightly shorter than femur III. Patella with two long spines. Tibia subtriangular towards the lateral side of paracymbium. Conductor small, rounded apically. Tegular apophysis small and nipple-like. Median apophysis elongate with middorsal spine. Stipes developed and subtriangular.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.90	1.40	3.20	3.40	1.00	12.90
2	3.55	1.15	2.40	2.65	0.85	10.60
3	2.30	0.90	1.35	1.60	0.65	6.80
4	3.70	1.20	2.75	2.80	0.70	11.15
Pedipalp	0.60	0.30	0.35	–	1.00	2.25

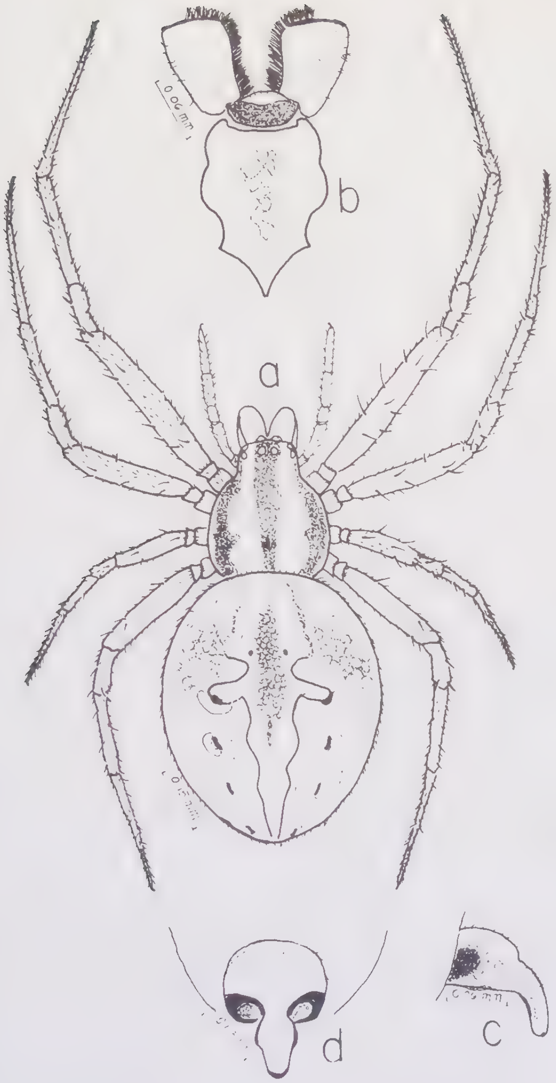


Fig. 395. Female *Neoscona theisi* (Walckenaer) (a); sternum, labium, and maxillae (b); and lateral (c) and dorsal (d) views of epigynum.

Abdomen elongate or ovate, with white median dagger-like markings and brown submedially. Venter yellowish brown with brownish bands on the spinnerets. *Female:* (Fig. 395a–d): Total length 10.05 mm. Cephalothorax 3.80 mm long, 3.00 mm wide, 2.6 mm high. Abdomen 6.25 mm long, 4.40 mm wide, 4.20 mm high. Similar to the male in appearance except leg spination in tibia II, measurements, and genitalia. Femoral venter without strong spines, similar to the male. Spination in tibia II = 3-10-4-3. Leg formula 1423.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.10	1.70	3.60	3.75	1.75	14.30
2	3.80	1.55	3.00	3.10	1.00	12.45
3	2.50	1.10	1.60	1.60	0.70	7.50
4	4.10	1.65	3.40	3.50	0.90	13.55
Pedipalp	1.00	0.50	0.85	–	1.30	3.65

Abdomen ovate, clothed with yellowish brown hairs, white dagger-like markings medially and bordered laterally by a brown band. Lateral edges of the brown band each with five semioblique dark brown spots in posterior one half. Epigynum with a long slender scape subparallel to the body in lateral view, scape wide at midlength in dorsal view, and inner part provided with a groove.

Natural history: Common in ricefields, grasslands, and other rice-based crops. Adults are often collected from November to May.

Material examined: PHILIPPINES: *Luzon Is.*, Cagayan Prov., Solana, four females and two males, 21 September 1981, R. Apostol; Nueva Ecija Prov., Cabanatuan, Sto. Domingo Vill., two females and two males, 23 October 1979, A.T. Barrion; Laguna Prov., Los Baños, IRRI Farm, ten females and four males, 16 February 1980, M. Perez and B. Garcia; Batangas Prov., Tanauan, Cale Vill., 16 females, ten males, and 22 spiderlings, August–September 1978, O. Serrano; *Panay Is.*, Iloilo, Oton Vill., five females and two males, 6 January 1981, M. Lumaban; *Palawan Is.*, Narra, six females and 72 spiderlings, 24 April 1979, A.T. Barrion; *Mindanao Is.*, South Cotabato, Koronadal, 12 females and five males, 7 March 1984, R. Baldostamon; Misamis Oriental, Claveria, 12 females and two males, 16 December 1989, E. Libetario. **BANGLADESH:** Joydevpur, seven females and two males, 23 October 1985, N.Q. Kamal. **VIETNAM:** Hanoi, PRRI Station, five females and two males, 9 August 1990, A.T. Barrion. **THAILAND:** Prachinburi Prov., Prachinburi, 17 females, five males, 128 spiderlings, 26 July 1989, A.T. Barrion. **INDONESIA:** Central Java, Yogyakarta, Klaten, Blabak Vill., four females and one male, 24 August 1989, A.T. Barrion.

Distribution: Oriental region.

Neoscona molemensis Tikader and Bal
(Fig. 396a–e)

Neoscona molemensis Tikader and Bal, 1982. Fauna of India 2(1): 257–259.
Araneus sp. Barrion and Litsinger, 1981. Entomol. 5(1): 162.

Redescription:
Female: Total length 7.58 mm. Cephalothorax 2.42 mm long, 1.95 mm wide, 1.40 mm high. Abdomen 5.16 mm long, 4.08 mm wide, 2.60 mm high. Cephalothorax, yellowish brown except dark brown lateral edge of narrowed cephalic area. Eight eyes in two recurved rows, AE more strongly recurved than PE. Eye diameter (mm): AME = PME = 0.13, ALE = 0.10, PLE = 0.08. Eye separation (mm): AME–AME = 0.11, AME–ALE = 0.20, PLE–PME = 0.25, PME–PME = 0.09. MOQ slightly wider in front (0.33 mm) than behind (0.30 mm). Clypeus height small, 0.77 AME diameter. Sternum brown, slightly longer than wide. Labium yellow apically, similar to the inner lateral margin of maxillae.

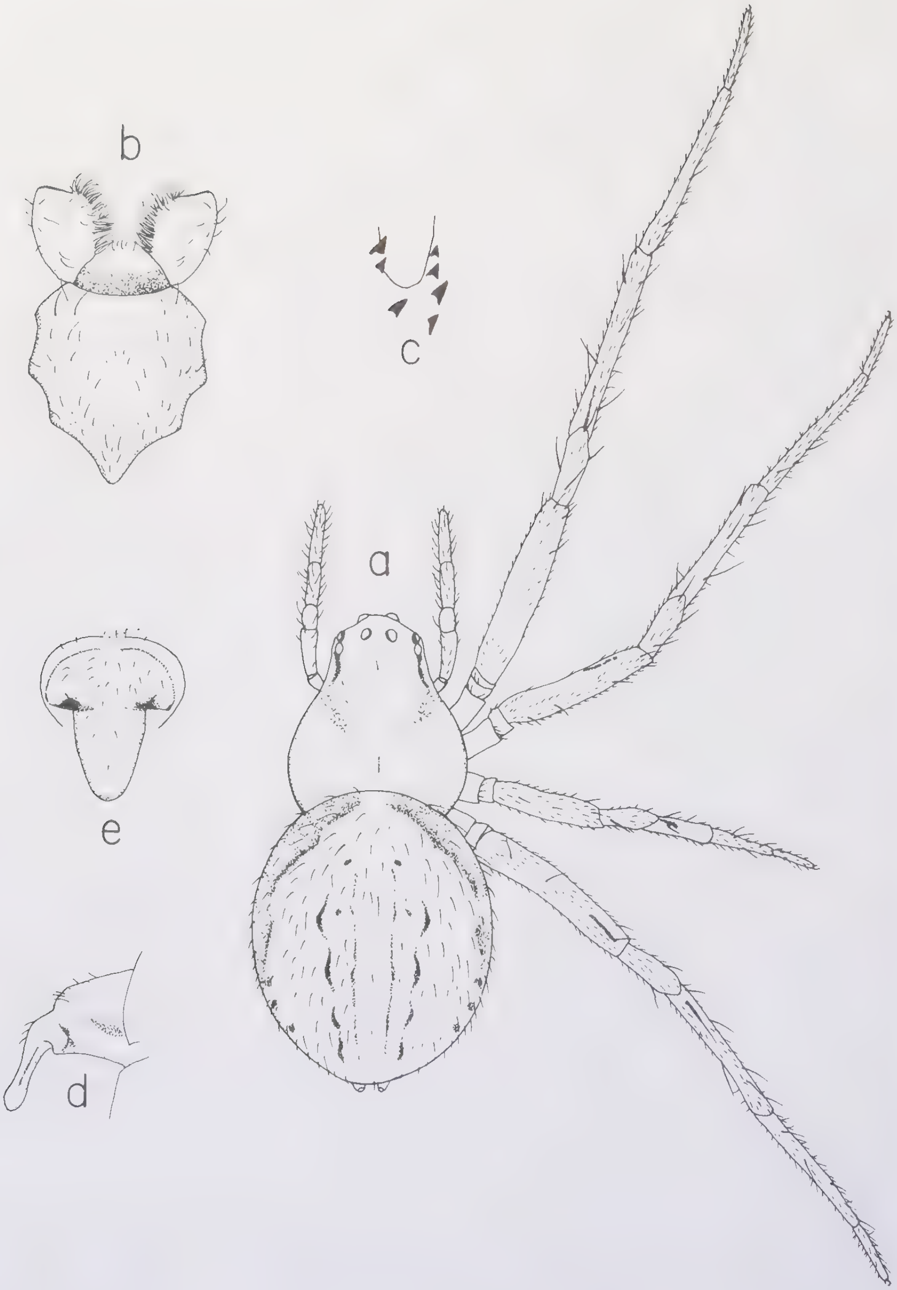


Fig. 396. Female *Neoscona molemensis* Tikader and Bal (a); sternum, labium, and maxillae (b) cheliceral teeth (c); and lateral (d) and dorsal (e) views of epigynum.

Chelicerae bear four promarginal and three retromarginal teeth. Legs yellowish brown with longitudinal black bands. Tibia I with eight ventral spines. Leg formula 1423.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.80	1.00	2.50	2.45	0.85	9.60
2	2.35	1.00	1.90	2.00	0.80	8.05
3	1.44	0.55	1.00	1.00	0.50	4.49
4	2.80	0.90	1.90	2.10	0.65	8.35
Pedipalp	0.60	0.30	0.50	–	0.85	2.25

Abdomen ovoid, with a white W-band and brown lateral bands. Epigynum with a long scape parallel to the body. Scape V-shaped with a large base and a relatively wide groove inside the midscape.

Natural history: The specimens were collected from all types of ricefields by sweeping.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Los Baños, IRRI Farm, five females and two immatures, 10 October 1980, A.T. Barrion; Batangas Prov., Tanauan, Cale Vill., four females, 16 August 1977, A.T. Barrion. **THAILAND:** Prachinburi, PRRI Station, two females, 7 August 1989, A.T. Barrion.

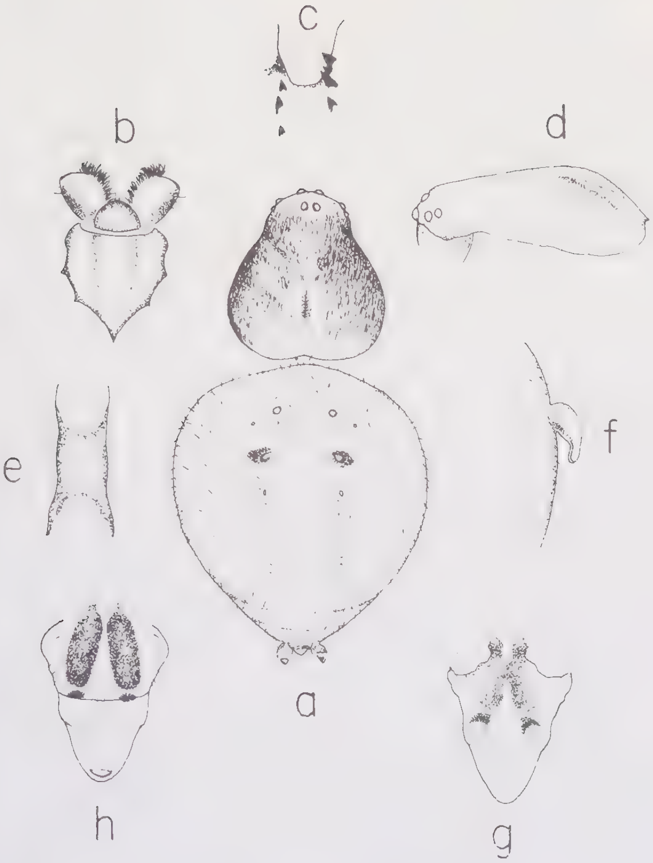


Fig. 397. Female *Neoscona nautica* (L. Koch) (a); sternum, labium, and maxillae (b) cheliceral teeth (c); lateral view of cephalothorax (d); side view of pedicel (e); side view of scape (f); and dorsal (g) and ventral (h) views of epigynum.

INDONESIA: Yogyakarta, Klaten, Blabak Vill., four females and four immatures, 24 August 1989, A.T. Barrion. **BANGLADESH:** Joydevpur, three females, 23 October 1985, N.Q. Kamal.
Distribution: India, Bangladesh (new record), Indonesia (new record), Thailand and Philippines (new record).

Neoscona nautica (L. Koch)
(Fig. 397a–h)

Epeira nautica L. Koch, 1875. Aegypt. Abyssin. Arachn. Jickeli: 17.
E. pullata Thorell, 1877. Annali. Mus. Civ. Genova 10: 385.
E. volucripes Keyserling, 1885. Verh. Zool. Bot. Ges. Wein. 34: 528.
Araneus nauticus Pocock, 1900. Fauna Brit. India, Arachn.: 228.
Neoscona volucripes F.O. Pickard-Cambridge, 1904. Biol. Cent. Am. 2: 473.
N. nautica Petrunkevitch, 1930. Trans. Conn. Acad. Arts. Sci. 30: 320.

Redescription:
Female: Total length 10.53 mm. Cephalothorax 3.20 mm long, 2.80 mm wide, 1.6 mm high. Abdomen 7.33 mm long, 6.41 mm wide, 5.33 mm high. Cephalothorax yellowish brown, narrow in front and wide behind, broadest between coxae II and III, posterior end concave medially. Cephalic area clothed with short brown hairs and thoracic area with a few white hairs near the longitudinal groove. Eight eyes in two recurved rows, strongly recurved AE shorter than the slightly recurved PE (1.34 : 1.4 mm). Eye diameter (mm): AME = PME = 0.16 and PLE = ALE = 0.12. AME separation 1.25 times eye diameter. AME–ALE separation 2.5 times ALE or 1.87 times AME diameter. PME separation one half eye diameter. PME–PLE separation 3.5 times PME diameter. Median ocular quadrangle wider in front than behind (0.52 : 0.40 mm). Clypeus height one half AME separation. Sternum yellow-brown, with a white median longitudinal band, heart-shaped, longer than wide, with lateral sides indented opposite coxae except coxa I, and with spurs between coxae II and III and between coxae III and IV, posterior end pointed and anterior end concave. Labium reddish brown, with yellow distal margin, wider than long (0.68 : 0.44 mm), separated from sternum with a soft yellow to transparent membrane. Maxilla brown with yellowish inner one third, serrula black, and scopula dark yellow, longer than wide (0.72 : 0.56 mm). Chelicera brown, vertical, with four promarginal and three retromarginal teeth, fang brown with a short dark brown base. First and third promarginal teeth larger than second and fourth. Legs brown, except yellowish brown metatarsus and tarsus, with pale transverse bands in all leg segments, tibial spination I and II = 4-7-3-3, III = 2-5-2-2, and IV = 2631, tarsus three-clawed with six to nine teeth in each superior and one or two teeth in inferior claw. Leg formula 1423. Palp yellow, except single-clawed dark brown tarsus with nine teeth. Pedicel parallel-sided with both ends deeply concave.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.80	1.68	3.24	3.52	1.08	13.32
2	3.20	1.60	2.68	3.00	1.00	11.48
3	2.24	1.04	1.44	1.60	0.72	7.04
4	3.92	1.32	2.64	2.96	0.88	11.72
Pedipalp	1.12	0.56	0.80	–	1.28	3.76

Abdomen ovate to semitriangular, mottled reddish brown with grayish tinge, clothed with short and long brown hairs, and bears four pairs (two small and two large) of median sigilla arranged longitudinally and parallel with each other. Posterior dorsal one half of abdomen with a pair of longitudinal brown bands and two procurved constrictions. Venter chalk-white except brownish epigynum and spinnerets. Anterior spinnerets close to each other, unlike the widely separated posterior. Epigynum curve nearly parallel to the body. Scape moderately long and triangular, transversely constricted medially, tip rounded and bordered.

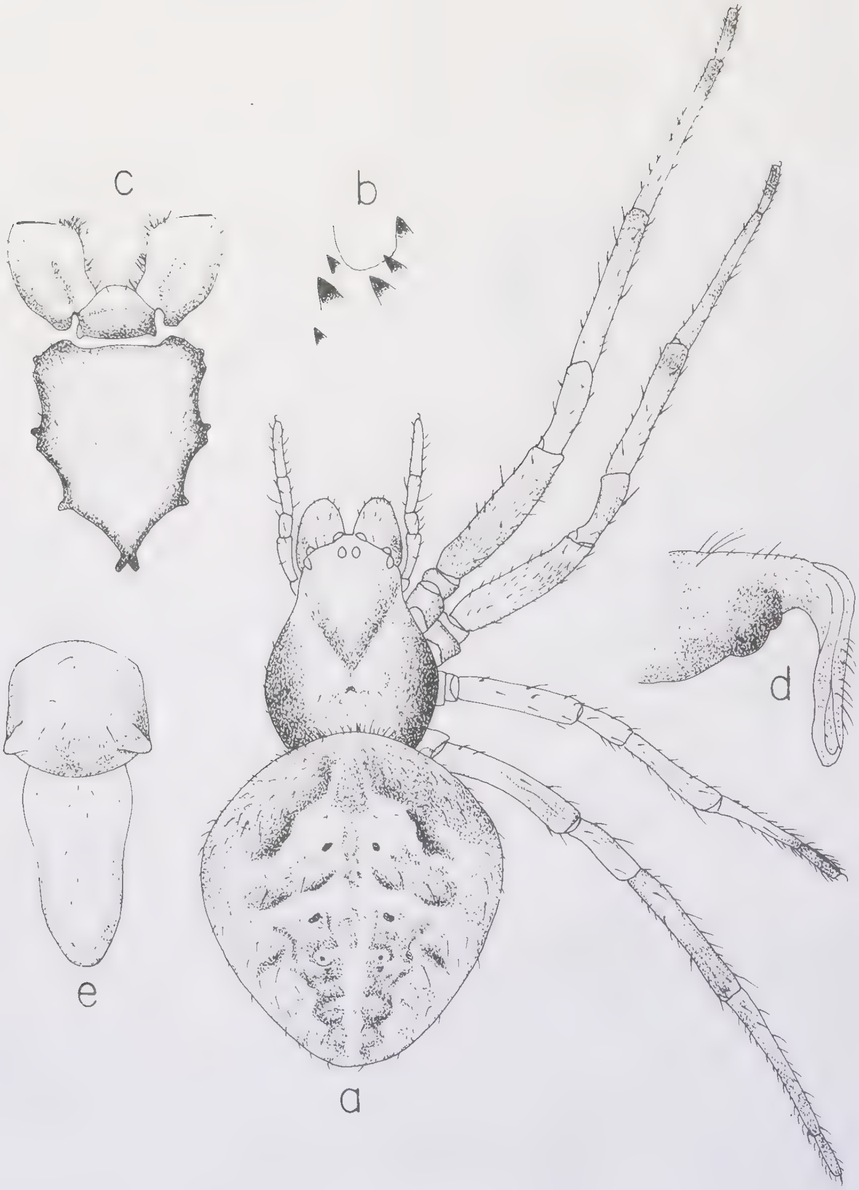


Fig. 398. Female *Neoscona rumpfi* (Thorell) dark form (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and lateral (d) and dorsal (e) views of epigynum.

Natural history: *N. nautica* was handpicked from its web built in wild *Phaseolus* growing in a levee in late September. The half-broken web contained adults of beanflies (three), leafhoppers (two), and an array of chironomid and ephydrid wings.
Material examined: PHILIPPINES: *Luzon Is.*, Nueva Ecija Prov., Cabanatuan, one female, September 1979, A.T. Barrion and M. Lumaban.
Distribution: India, Burma, Pakistan, North America, Philippines (new record).

Neoscona rumpfi (Thorell)
(Figs 398a–e, 399a–f)

Araneus rumpfi Thorell, 1887. Ann. Mus. Civ. Stor. Nat. Genova 13: 296.

Neoscona rumpfi Tikader and Bal, 1981. Rec. Zool. Sur. Ind. Occ. Pap. 24: 18.

Redescription:
Female: Total length 19.50 mm. Cephalothorax 7.00 mm long, 5.33 mm wide, 4.00 mm high. Abdomen 12.50 mm long, 10.33 mm wide, 9.78 mm high. Cephalothorax yellow-brown, clothed with long white hairs in the cephalic area, lateral margins of thoracic area each with a broad longitudinal reddish brown band. Eight eyes in two recurved rows, AE slightly shorter than PE. Eye diameter (mm): AME = 0.28, PME = ALE = 0.20, PLE = 0.16. Eye separation: AME–AME 1.3 times eye diameter, AME–ALE nearly three times AME diameter, PME–PME as long as one PME diameter, PME–PLE about six times PME diameter. Clypeus height 0.6 AME diameter. Sternum yellow medially and brown along all

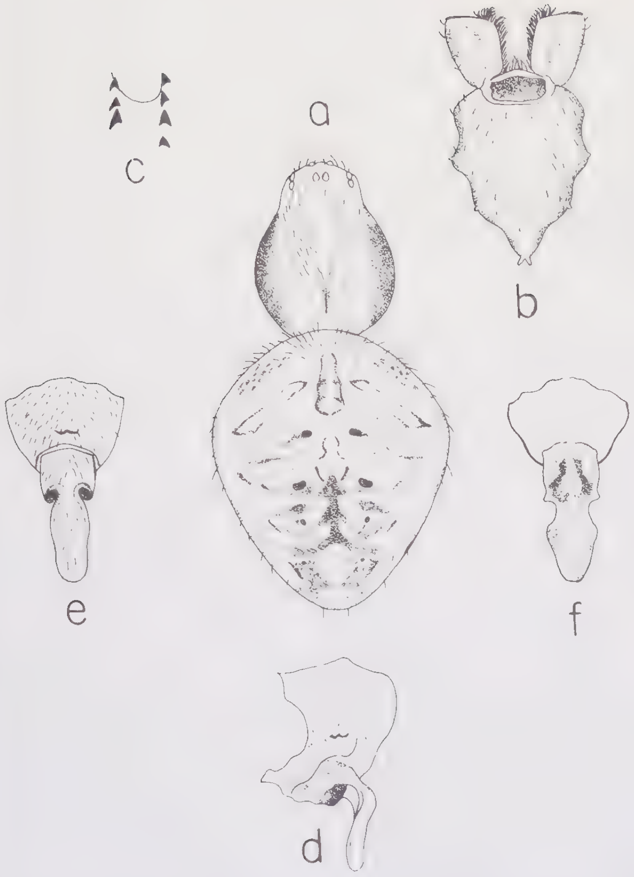


Fig. 399. Female *Neoscona rumpfi* (Thorell) light form (a); sternum, labium, and maxillae (b); cheliceral teeth (c); lateral (d), dorsal (e), and ventral (f) views of epigynum.

margins, with tubercles in between coxae. Labium wider than long, apical margin yellow, and basally brown. Maxillae longer than wide, brown except yellow inner lateral margin. Chelicerae brown, with a prominent boss, promargin and retromargin with three teeth each. Legs long and very strong, yellowish except distal ends of segments with distinct black transverse bands. Femora I and II reddish brown. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	6.17	3.25	6.00	5.75	1.75	22.92
2	6.00	3.17	5.42	5.33	1.50	21.42
3	5.00	2.08	3.00	2.75	1.33	14.16
4	7.08	2.58	4.83	5.17	1.50	21.16
Pedipalp	2.56	1.33	1.00	–	1.89	6.78

Abdomen subovate to subtriangular, longer than wide, dorsum with an inverted Christmas tree-like folium of brown and chalk-white bands, cardiac area brown, serving as Christmas tree base. Some specimens with incomplete or unclear Christmas tree folium. Ventral side of abdomen dirty brown, with a broad midventral black band between epigynum and spinnerets. Epigynum with a long posteriorly directed or curved scape, base of scape constricted and with a pair of distinct horn-like lateral lobes, apex and lateral margins rebordered.

Natural history: A female was found inside a green rolled leaf of pigeon pea *Cajanus cajan* grown as windbreaks for upland rice in September.

Material examined: PHILIPPINES: *Luzon Is.*, Batangas Prov., Lipa City, Marauoy Vill., one female, 17 September 1985, A.T. Barrion.

Distribution: India, Sri Lanka, Pakistan, Burma, Malaysia, and the Philippines (new record).

Genus *Araneus* Clerck

Araneus Clerck, 1757. Argn. Suec.: 15.
Aranea Linnaeus, 1758. Systema Naturae 10: 619.
Epeira Walckenaer, 1805. Tableau des Araneides: 53.
Atea C.L. Koch, 1837. Uebersicht des Arachniden-systems 1: 3.
Neopora Simon, 1864. Hist. Nat. des Araign. ed. I: 261.
Burgessia McCook, 1893. Amer. Spid. 3: 182.
Araneus Simon, 1895. Hist. Nat. Araign. 1(4): 829.
Conepeira Archer, 1951. Am. Mus. Novit. 1487: 12.
Araneus Yaginuma, 1960. Spiders of Japan in Color: 51–55.

Araneus Clerck is a large genus widely scattered in all regions of the world. It has moderately convex cephalothorax without horny outgrowths, fovea transverse in the female and longitudinal in the male, often with lateral prolongations. Median ocular quadrangle not much longer than wide and forming a trapezium. ME unequal in size. Laterals close to each other and borne on a prominent tubercle. Both eye rows (AE and PE) recurved. Males with a hook in coxa I, a groove in femur II, tibia II armed with spines (usually bent) prolaterally. Epigynum with a prominent scape of variable form – long, wrinkled and winding, short and straight. Epigynal openings situated in the grooves at the base. Pedipalp of male with a large terminal apophysis, patella with two strong, long, and curved spines and cymbium narrow, strip-like. Male pedipalp with one or two spines in patella.

Araneus inustus (C.L. Koch)

(Figs 400a–d, 401a–c)

Epeira inustus C.L. Koch, 1871. Arachn. Austral. 1(1): 94.

Redescription:

Male (Fig. 400a–d): Total length 5.21 mm. Carapace 2.44 mm long, 1.83 mm wide. Abdomen 2.77 mm long, 1.94 mm wide. Characters and coloration as in the female except for black line along fovea. Radial furrows

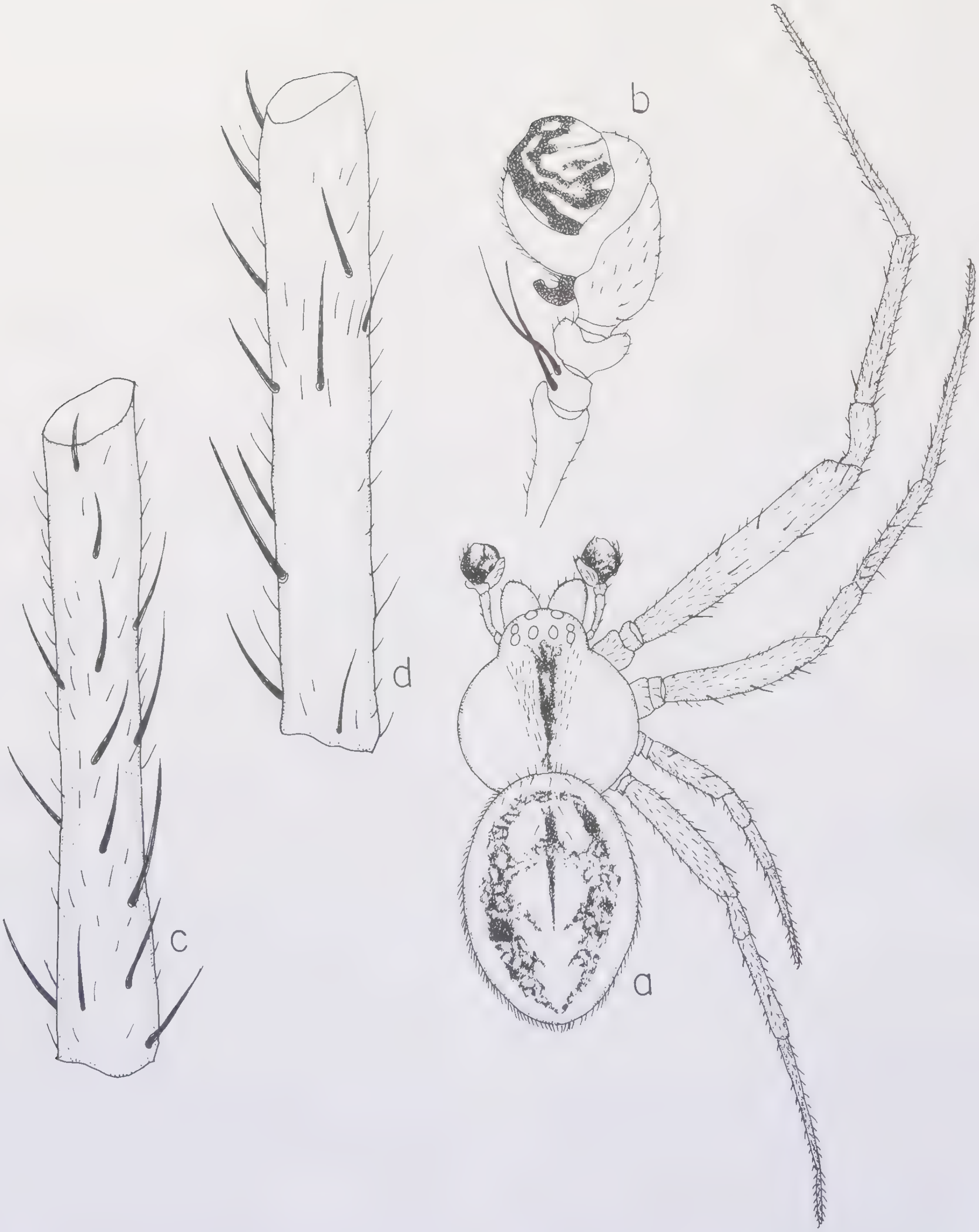


Fig. 400. Male *Araneus inustus* (C.L. Koch) (a); pedipalp (b); and lateral (c) and dorsal (d) views of tibia II.

more distinct. Tibia II with about 10–12 prolateral and two dorsal spines. Leg formula 1243.

Female (Fig. 401a–c): Total length 6.64 mm. Carapace 2.48 mm long, 2.00 mm wide. Abdomen 4.16 mm long, 3.04 mm wide. Cephalothorax brown, longer than wide; carapace with a central dark brown longitudinal band, width twice that of head region; fovea transverse; head and carapace not as hairy as in *Argiope*; median ocular quadrangle wider in front than behind; both rows recurved, anterior more recurved than posterior; anterior median eyes the largest; chelicerae brown with four promarginal and three retromarginal teeth; fang

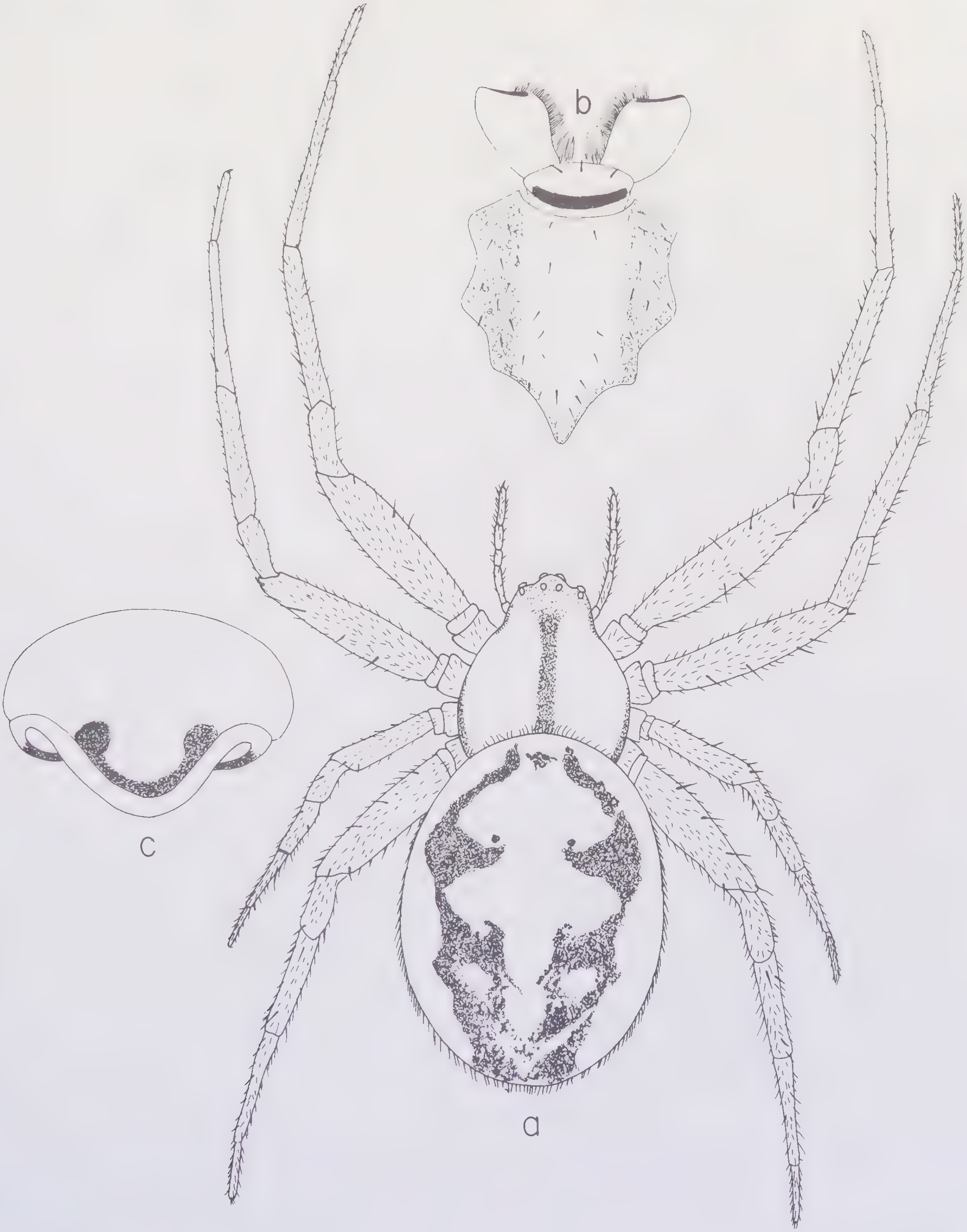


Fig. 401. Female *Araneus inustus* (C.L. Koch) (a); sternum, labium, and maxillae (b); and epigynum (c).

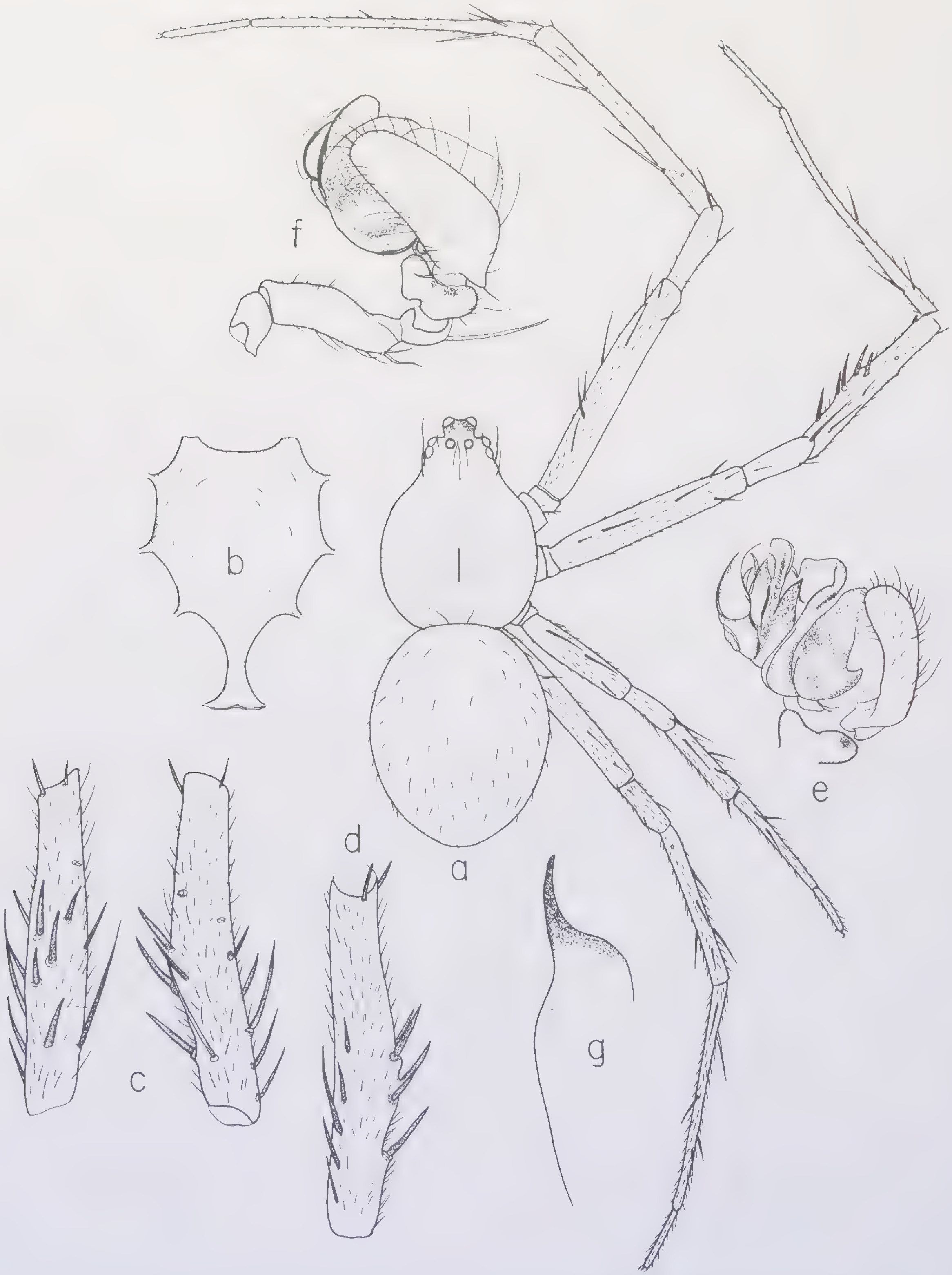


Fig. 402. Male *Araneus tinikdikitus* n. sp. (a); sternum (b); prolateral and retrolateral (c) and ventral (d) views of tibia II; ventral (e) and lateral (f) views of pedipalp; and median apophysis (g).

reddish brown; legs, maxillae and palps yellow; labium yellow except for reddish brown base; sternum brown, longer than wide, edges curved to receive coxal base; leg formula 1243. Abdomen yellow with leaf-like to dagger-like markings on dorsum; spinnerets yellow, inner set closer together than outer set.
Natural history: Very common in rice growing tracts of South and Southeast Asia.
Material examined: Many specimens from South and Southeast Asia.
Distribution: South and Southeast Asia.

Araneus tinikdikitus new species
(Fig. 402a–g)

Description:
Male: Total length 4.80 mm. Cephalothorax 2.30 mm long, 1.70 mm wide, 1.20 mm high. Abdomen 2.50 mm long, 2.10 mm wide, 1.80 mm high. Cephalothrox yellowish brown with a yellow V-shaped spot at base of cephalic area and brown fovea. Eight eyes in two recurved rows. Eye diameter (mm): AME = 0.18, PME = 0.13, PLE = 0.10, ALE = 0.09. Eye separation (mm): AME–AME: 0.14, ALE–AME = PME–PME = 0.10, PME–PLE = 0.11. MOQ 1.30 times wider in front than behind. Clypeus height about 0.7 AME diameter, difficult to see as AME very much in front. Sternum uniformly yellow, with posterior end slightly extended beyond coxae IV. Labium and maxillae both yellowish. Maxillae each with a tooth opposing femoral tooth of pedipalp. Chelicerae vertical, each with four promarginal and three retromarginal teeth. Legs yellow, relatively slender and spinous. Coxa I with a slightly curved tooth. Tibia II with six ventral and seven prolateral spines. Four prolateral spines in the middle of tibia II. Metatarsus I/tarsus I = 3.33. Leg formula 1243. Pedipalp longer than femur III. Patella with a single spine. Embolus and terminal apophysis both with finely pointed processes. Median apophysis blunt towards tip.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.45	1.00	2.60	3.00	0.90	9.95
2	2.30	0.85	1.90	2.60	0.85	8.50
3	1.55	0.55	1.05	1.25	0.55	4.95
4	2.45	0.70	1.90	2.30	0.60	7.95
Pedipalp	0.50	0.20	0.25	–	0.75	1.70

Abdomen globose yellow, clothed with short brown hairs and median area with pale brown spots. Venter uniformly yellow except black transverse band anterior of posterior pair of spinnerets.
Etymology: Name after the set of spines close together in midprolateral part of tibia II.
Natural history: D-Vac collected from irrigated rice at 55 days after transplanting in July.
Material examined: PHILIPPINES: *Luzon Is.*, Laguna Prov., Liliw, Tuybaana Vill., holotype male, 2 July 1981, A. Alferez.
Distribution: Philippines.

Araneus dospinolongus new species
(Fig. 403a–f)

Description:
Male: Total length 3.10 mm. Cephalothorax 1.50 mm long 1.30 mm wide; 1.00 mm high. Abdomen 1.60 mm long, 1.20 mm wide, 0.80 mm high. Cephalothorax brownish yellow except dark brown cephalic area and black eye margins. Eight eyes in two recurved rows, AE strongly recurved and PE very slightly recurved. Eye diameter (mm): AME = 0.15, PME = 0.11, PLE = 0.08, ALE = 0.06. Eye separation (mm): AME–AME = 0.14, AME–ALE = 0.15, PME–PME = 0.13, PME–PLE = 0.21, LE contiguous. MOQ-AW 1.16 times wider than MOQ-PW, posterior end extended beyond coxae IV. Labium subtriangular, wider than long, brown with yellow apex and a pair of black spots midlaterally. Maxillae yellowish brown with about seven black spots in three transverse rows. Chelicerae yellow, vertical, with one minute retromarginal and two promarginal teeth. Legs yellow except brownish red tibia I and metatarsi I and II, and light brown metatarsus III. Spination in femur I = 3-0-2-1 in right leg and 3-0-2-2 in left leg, apical spines more robust than rest of spines, tibia I = 3-2-2-2 in right leg and 3-2-1-1 in left leg. Tibia II = 3-4(1-1-2)-2-1. Apicoventrals of coxae I with a tubercle matching that in maxillae and the unevenly bifurcate tubercle at basoventrals of each femur of pedipalp. Metatarsus I/tarsus I = 2.5. Leg formula 1243. Pedipalp shorter than femur IV. Patella bears a single long spine, almost as long as cymbium. Tibia with a small apicoventral process or spur, prolateral with two long fine hairs, retrolateral with a short and a long hair, dorsal with three or four trichobothria and dorsosubapical with three fine hairs in a transverse row. Paracymbium typical of *Araneus*. Cymbium longer than wide, oblique towards apex, except a semihooked and pointed tip. Paramedian apophysis sickle-shaped, parallel to the upper part of the double-hooked median apophysis. Embolus short and lanceolate.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	1.80	0.70	1.45	1.25	0.50	5.70
2	1.60	0.60	1.35	1.05	0.40	5.00
3	0.95	0.35	0.50	0.55	0.35	2.70
4	1.30	0.45	0.70	0.95	0.45	3.85
Pedipalp	0.35	0.15	0.18	–	0.56	1.24

Abdomen whitish yellow, with a pair of brown spots, longer than wide, ovoid, and rounded at both ends. Venter yellowish brown with dark brown epigastric furrow.
Etymology: Named after the two long spines on the tibia of leg I.
Natural history: The holotype male was collected from a kerosene light trap installed in a slash-and-burn field in September.
Material examined: PHILIPPINES: *Luzon Is.*, Quezon

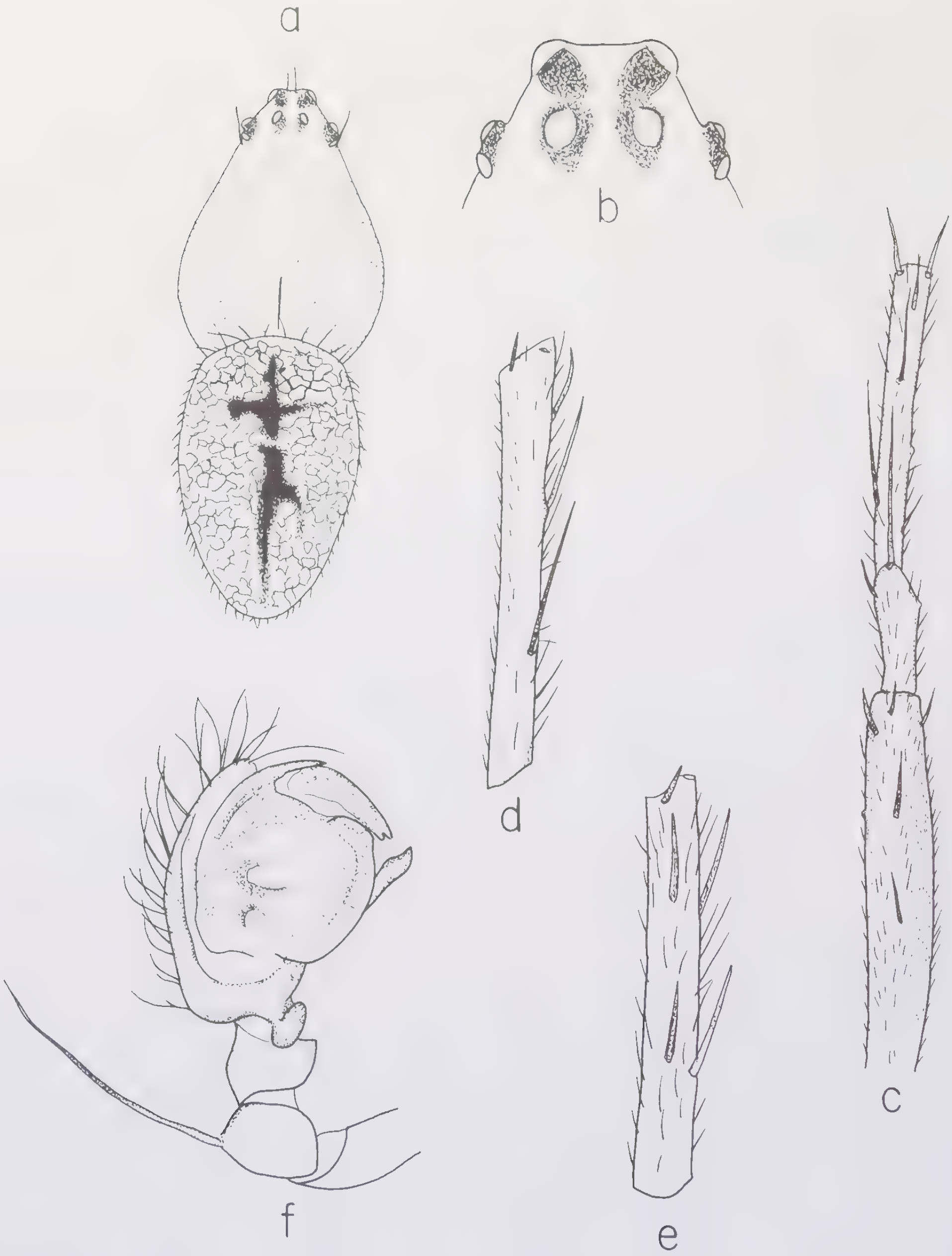


Fig. 403. Male *Araneus dospinolongus* n. sp. (a); eye pattern (b); femur, patella, and tibia of leg I (c); lateral view of tibia I (d); ventroprolateral view of tibia II (e); and pedipalp (f).

Prov., Real, Llavac Vill., holotype male, 12 September 1984, A.T. Barrion and M. Perez.
Distribution: Philippines.

Araneus tatsulokeus new species
(Fig. 404a–f)

Description:
Female: Total length 5.95 mm. Cephalothorax 2.17 mm long, 1.94 mm wide, 1.38 mm high. Abdomen 3.78 mm long, 4.11 mm wide, 2.38 mm high. Cephalothorax, legs, chelicerae, sternum, basal one half of labium, and inner half of maxillae yellow-brown. Cephalic area 0.3 times narrower than the thoracic area. Fovea wide M-shaped. Eight eyes in two rows, both AE and PE recurved, AE narrower (0.88 mm) than PE (0.94 mm). Eye diameter (mm): AME = 0.14, ALE = PME = 0.12, PLE = 0.10. Eye separation: AME–AME = PME–PME as long as one PME diameter, AME–ALE 1.7 times AME diameter or twice ALE diameter, PME–PLE 2.33 times PME or 2.8 times PLE diameter. Clypeus height 0.60 AME diameter. Sternum as in other araneids, subapicals with moderately long dark brown hairs. Labium narrowed towards apex, apical one half yellow, and basal one half brown. Maxillae yellow, a little longer than wide. Chelicerae robust basally, promargin and retromargin with three teeth each. Legs moderately long,

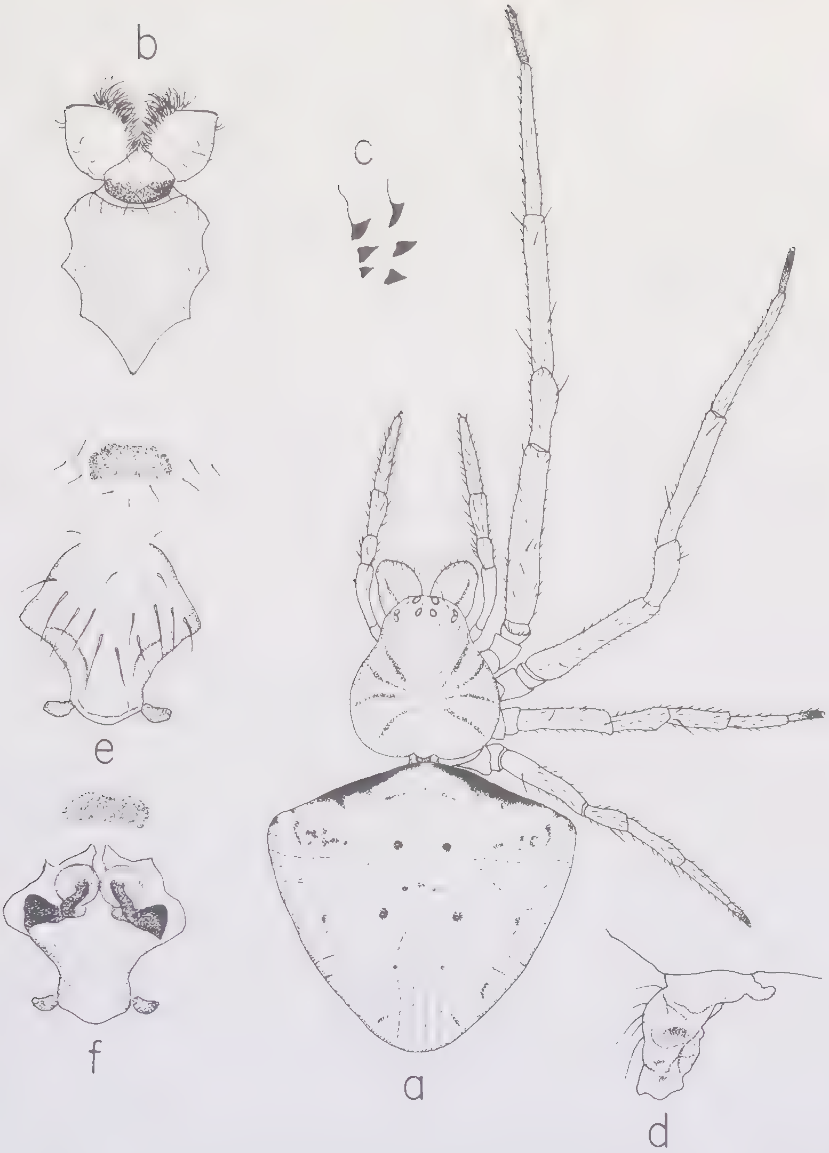


Fig. 404. Female *Araneus tatsulokeus* n. sp. (a); sternum, labium, and maxillae (b); tooth pattern (c); and lateral (d), dorsal (e), and ventral (f); views of epigynum.

apices of tibiae I and II with a curved prolateral spine, and apices of tibiae III and IV with a curved retromarginal spine. Leg formula 1243. Long spines on pedipalps' segments almost twice longer than leg segments' diameter, tibiae with a long dorsal trichobothria in the basal one third, single claw of tarsi with six strong teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.33	1.08	2.06	1.89	0.50	7.86
2	2.22	1.00	1.89	1.75	0.56	7.42
3	1.38	0.67	0.75	0.78	0.39	3.97
4	1.94	0.78	1.11	1.33	0.47	5.63
Pedipalp	0.67	0.25	0.44	–	0.89	2.45

Abdomen chalk-white and triangular, 1.08 times wider than long, apical margins and lateral tubercles black, three pairs of sigilla brown with the apical pair on a level with the lateral tubercle, median pair the largest and posterior pair the smallest. Four longitudinal lines posterior of the posterior pair of sigilla. Epigynum with a pair of sclerotized lateral flanges near the posterior plate, subtriangular medially, each spherical spermatheca ca. as large as diameter of posterior plate. Anterior of the bulge with a black transverse black band. In lateral view epigynum projected outward, vertical in top view.

Etymology: The specific epithet was derived from the triangular shape of the abdomen, in Tagalog 'tatsulok'.

Natural history: A single female was collected by sweep net from a weedy ricefield in August.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna

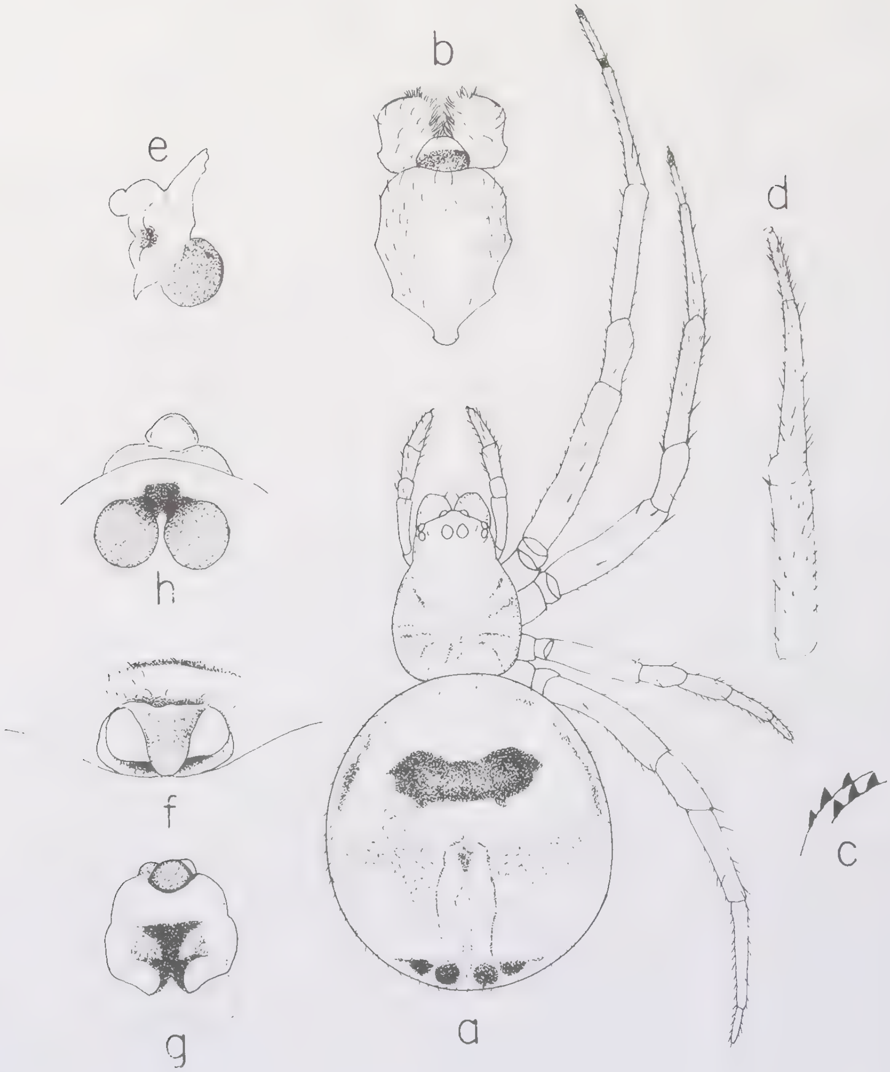


Fig. 405. Female *Araneus mitificus* (Simon) (a); sternum, labium, and maxillae (b) tooth pattern (c); part of leg IV (d); and lateral (e), dorsal (fg) and ventral (h) views of epigynum.

Prov., Caliraya, Mahipon Vill., holotype female, 21 July 1986. A.T. Barrion.
Distribution: Philippines.

Araneus mitificus (Simon)
(Fig. 405a–h)

Epeira mitifica Simon, 1886. Act. Soc. Linn. Bordeaux 40: 150.
Araneus mitifica Boesenberg and Strand, 1906. Abh. Senckenb. Naturforsch. Ges. 39(1–2): 22.
A. mitificus (Simon) Yaginuma, 1978. Spiders of Japan in Colour: 55.
Zilla nawazi Dyal, 1935. Bull. Dep. Zool. Punjab Univ. 1: 186.

Redescription:
Female: Total length 8.05 mm. Cephalothorax 3.05 mm long, 1.94 mm wide, 1.17 mm high. Abdomen 5.00 mm long, 4.67 mm wide, 3.61 mm high. Cephalothorax, legs, and pedipalps yellowish green, and blackish around eye margins. Cephalic area slightly narrowed anteriorly, lower than the thoracic area. Fovea moderately long and longitudinal. Eight eyes in two rows, AE almost as long as PE (19 : 20 mm), strongly recurved. PE straight to slightly recurved. Eye diameter (mm): AME = PME = 0.16, PME = 0.12, ALE = 0.11. Eye separation: AME–AME = AME–ALE one fifth longer than one eye diameter, PME–PME one half PME diameter, PME–PLE 1.63 times longer than one PME diameter. ALE–PLE one-third of PLE diameter. Clypeus height 0.5 times AME diameter. Sternum brownish yellow, longer (1.42 mm) than wide (0.92 mm), with moderately long brown submarginal hairs opposite coxae I–III. Labium narrow and yellowish in the apical one half. Maxillae yellowish brown and longer than wide. Chelicerae brownish with a moderate boss, promargin and retromargin with three teeth each. Legs brown except black apices of metatarsi and tarsi I and II. Tarsus

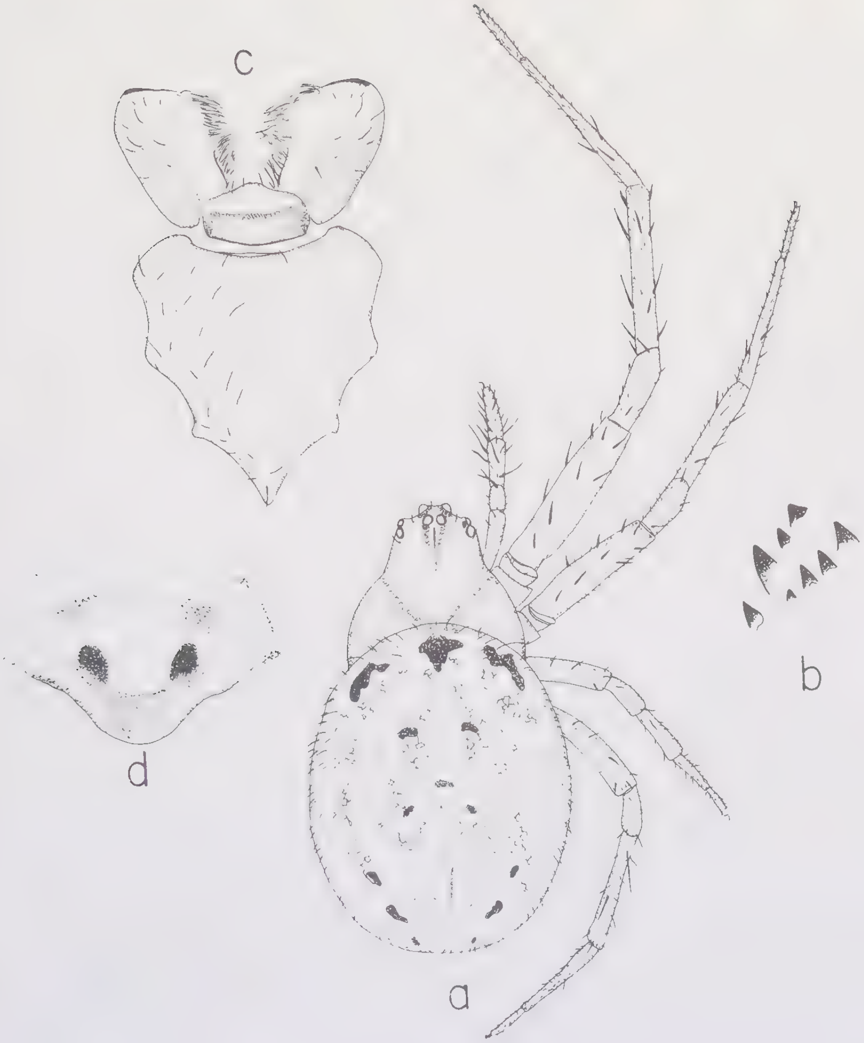


Fig. 406. Female *Araneus ellipticus* (Tikader and Bal) (a); teeth (b); sternum, labium and maxillae (c); and epigynum (d).

III with more setae and spines than the rest of the leg segments. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.67	1.17	2.28	2.22	0.61	8.95
2	2.22	1.11	1.72	1.78	0.72	7.55
3	1.39	0.72	0.94	1.00	0.61	4.66
4	2.17	1.00	1.33	1.53	0.50	6.53
Pedipalp	0.80	0.32	0.48	–	0.84	2.44

Abdomen globular, white, with a yellow anterior band, black wing-like band submedially, and four transverse black humps posteriorly. Epigynum with anteriorly curved or hooked scape in side view, dorsally the scape is tongue-like with a rounded posterior plate producing two depressions, spermathecae rounded with their extensions fused.

Natural history: One adult female was collected by sweep net from 92-day old dryland rice in July.

Material examined: PHILIPPINES: *Mindanao Is.*, South Cotabato, Koronadal Lake Sebu Vill., two females, 28 July 1985, A.T. Barrion.

Distribution: Burma, Thailand, Vietnam, Singapore, Papua New Guinea, Philippines (new record), India, Pakistan, Hongkong, Bangladesh and Japan.

Araneus ellipticus (Tikader and Bal)
(Fig. 406a–d)

Neoscona elliptica Tikader and Bal, 1981. Rec. Zool. Surv. India Occ. Pap. 24: 24.

Araneus ellipticus Grasshoff, 1986. Zool. Wetensch. 250: 118.

Redescription:

Female: Total length 5.95 mm. Cephalothorax 2.20 mm long, 1.75 mm wide, 1.60 mm high. Abdomen 3.75 mm long, 3.00 mm wide, 3.10 mm high. Cephalothorax yellowish brown with two recurved eye rows. Eye diameter (mm): AME = PME = 0.10, ALE = 0.09, PLE = 0.08. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.14, PME–PME = 0.05, PME–PLE = 0.24. MOQ 1.25 times wider in front than behind. Clypeus height 0.80 AME diameter. Sternum yellow, longer than wide, slightly concave anteriorly and pointed posteriorly. Labium and maxillae yellow in apical one third and inner one third, respectively. Chelicerae vertical, yellowish brown with three promarginal and three retromarginal teeth. Legs uniformly yellowish brown without strong ventral femoral spines. Spination in tibiae I = II = 2-8(2-2-2-2)-2-3, and IV = 2-4(1-1-2)-2-2. Metatarsus I/tarsus I = 2.80. Leg formula = 1423. Pedipalp yellow with a single claw, total length slightly longer than femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.30	0.80	1.90	2.10	0.75	7.85
2	2.00	0.80	1.45	1.60	0.70	6.55
3	1.30	0.60	0.70	0.90	0.55	4.05
4	2.30	0.90	1.40	1.60	0.60	6.80
Pedipalp	0.75	0.30	0.60	–	0.70	2.35

Abdomen elliptical but roundish at both ends, yellowish white to brown, with black bands anteriorly, four pairs of brown sigilla, and two or three pairs of black spots subposteriorly. Venter yellowish brown. Epigynum small, with a short but wide V-shaped or triangular scape.

Natural history: The female specimen was collected by sweeping irrigated ricefield in October.

Material examined: BANGLADESH: Joydevpur, BRRI Field, two females and one spiderling, 26 October 1984, A.T. Barrion.

Distribution: India, Bangladesh (new record).

Araneus santacruziensis new species
(Fig. 407a–e)

Description:

Female: Total length 10.58 mm. Cephalothorax 3.75 mm long, 2.67 mm wide, 2.13 high. Abdomen 6.83 mm long, 4.83 mm wide, 4.42 mm high. Cephalothorax yellowish brown with black eye margins, cephalic area 0.6 width of thoracic area. Eight eyes in two recurved rows, AE strongly recurved but shorter than the less recurved PE. Eye diameter (mm): AME = 0.20, PME = 0.16, ALE = PLE = 0.14. Eye separations: AME–AME 1.2 times AME diameter, AME–ALE 1.7 times AME or 2.4 times ALE diameter, PME–PME as long as one PME diameter, PME–PLE 2.2 times AME diameter. Median ocular quadrangle 0.33 times narrower behind than the anterior, width in front as long as its height. Clypeus height 0.6 AME diameter. Sternum heart-shaped, as long as wide, yellow, and clothed with light brown hairs. Labium wider than long, light brown with pale yellow distal border. Maxillae as wide as long, yellow, and provided with distinct scopulae. Chelicerae strong, yellow, except reddish brown fang, promargin and retromargin with four teeth each. Promarginal teeth stronger than retromarginal teeth. Legs long and relatively slender, uniformly yellow, except for light gray hairs and thin brown setae, tibiae I and II with two long dorsal erect setae, tibia I with one or two long and erect trichobothria dorsally, ventral spines of metatarsi stronger than the tibiae, tarsi three-clawed with six or seven teeth in each of the superior claws and two teeth in the inferior claw. Pedipalps yellow, single-clawed, with six strong teeth. Leg formula 1243.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.00	1.33	2.67	2.50	1.17	10.67
2	2.75	1.25	2.33	2.25	0.92	9.50
3	1.92	0.92	1.25	1.17	0.50	5.76
4	2.33	1.33	1.67	1.88	0.83	8.04
Pedipalp	1.17	0.58	0.83	–	1.25	3.83

Abdomen ovoid, yellow, with three or four pairs of brown spherical sigilla, the median sigilla the largest. Venter chalk white except brown epigynum. Laterals uniformly yellow. Spinnerets almost at midlength of abdomen in ventral view and arranged in a circular manner. Epigynum transversely ovate, with a very short and wide scape originating anteriorly, posterior epigynal margin well developed, depression prominent, spermathecae button-like and converging apically.

Etymology: The epithet *santacruziensis* was named after the type locality.

Natural history: Two females were separately collected from 60-day-old upland rice in July both resting underneath a downwardly folded leaf.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Sta. Cruz Vill., one holotype female, 7 July 1988, A.T. Barrion and E. Libetario; one paratype female, same data as holotype.

Distribution: Philippines.

Genus *Eriovixia* Archer

Eriovixia Archer, 1951. Amer. Mus. Novitates 1487: 18.

Eriovixia Archer is a small tropical genus of araneid spiders, comprising seven species. Berman and Levi (1971) treated the genus as a synonym of *Neoscona* Simon, 1864. However, Grasshoff (1986) removed it from the synonymy of *Neoscona* and treated it as a valid genus. This genus resembles *Eustala* Simon, 1895 in face appearance, presence of caudal elevation or appendage above and beyond the spinnerets.

In general, members of the genus have pilose carapace especially the cephalic area; AE row straighter than the PE row; PME slightly larger than anterior ones; abdomen subtriangular, with or without a caudal appendage; tibia I longer than the very short but wide carapace; female epigynum bears a stout scape with

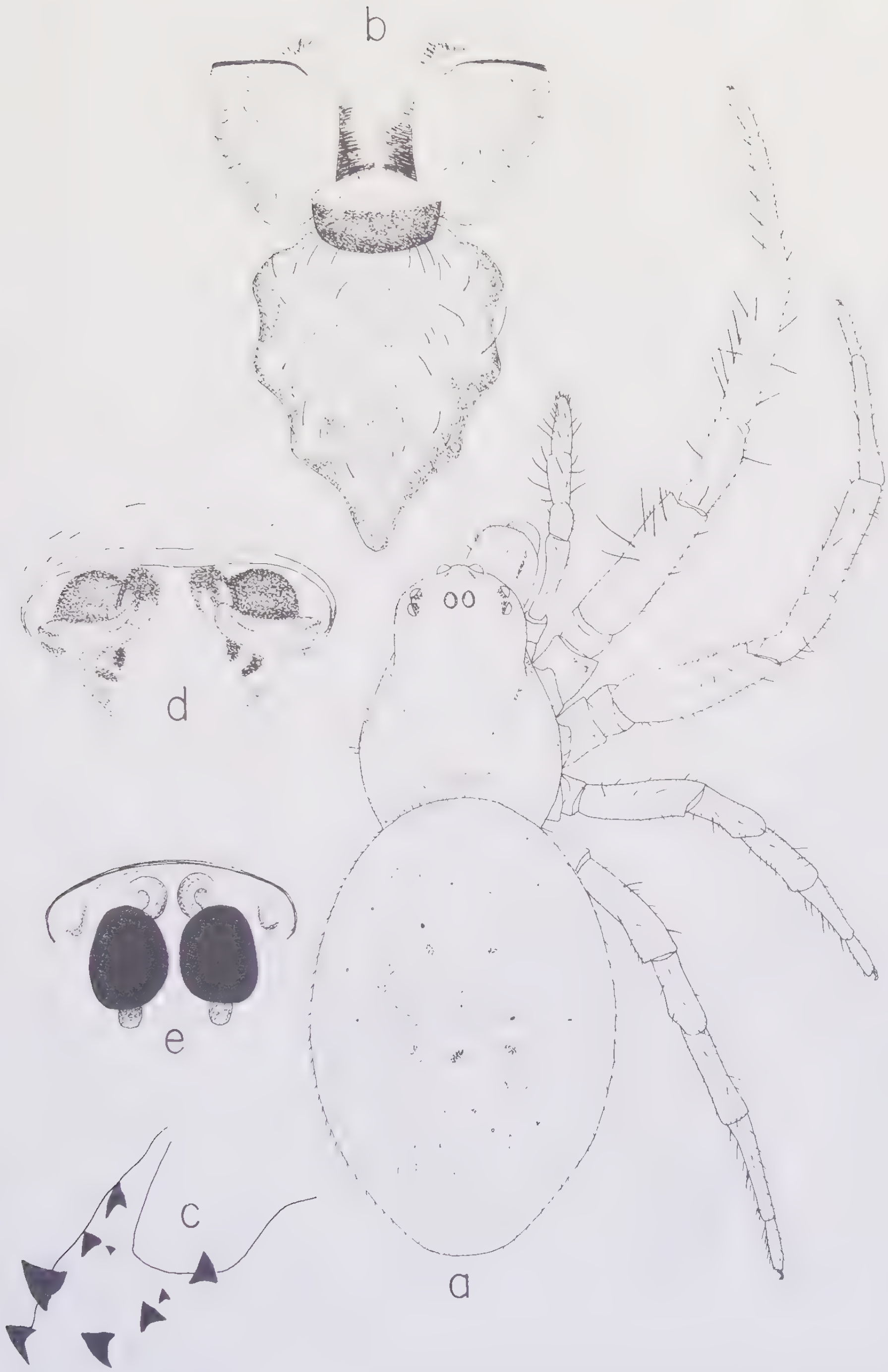


Fig. 407. Female *Araneus santacruziensis* n. sp. (a); sternum, labium, and maxillae (b); teeth (c); and dorsal (d) and ventral (e) views of epigynum.

recurved tip, flatter than those in *Neoscona*, atriolar openings anterior to a pair of curved sclerites nearly incorporated in main body of scape and visible only caudally; and tibia of male pedipalps with two long setae and median apophysis projected apically.

Eriovixia porcula (Simon) is the only known Philippine species.

Eriovixia laglaizei (Simon)

(Fig. 408a–j)

Epheira laglaizei Simon, 1877. Annls. Soc. Ent. Fr. 7(5): 77.

Araneus laglaizei (Simon) Pocock, 1900. Fauna Brit. India, Arachn.: 224.

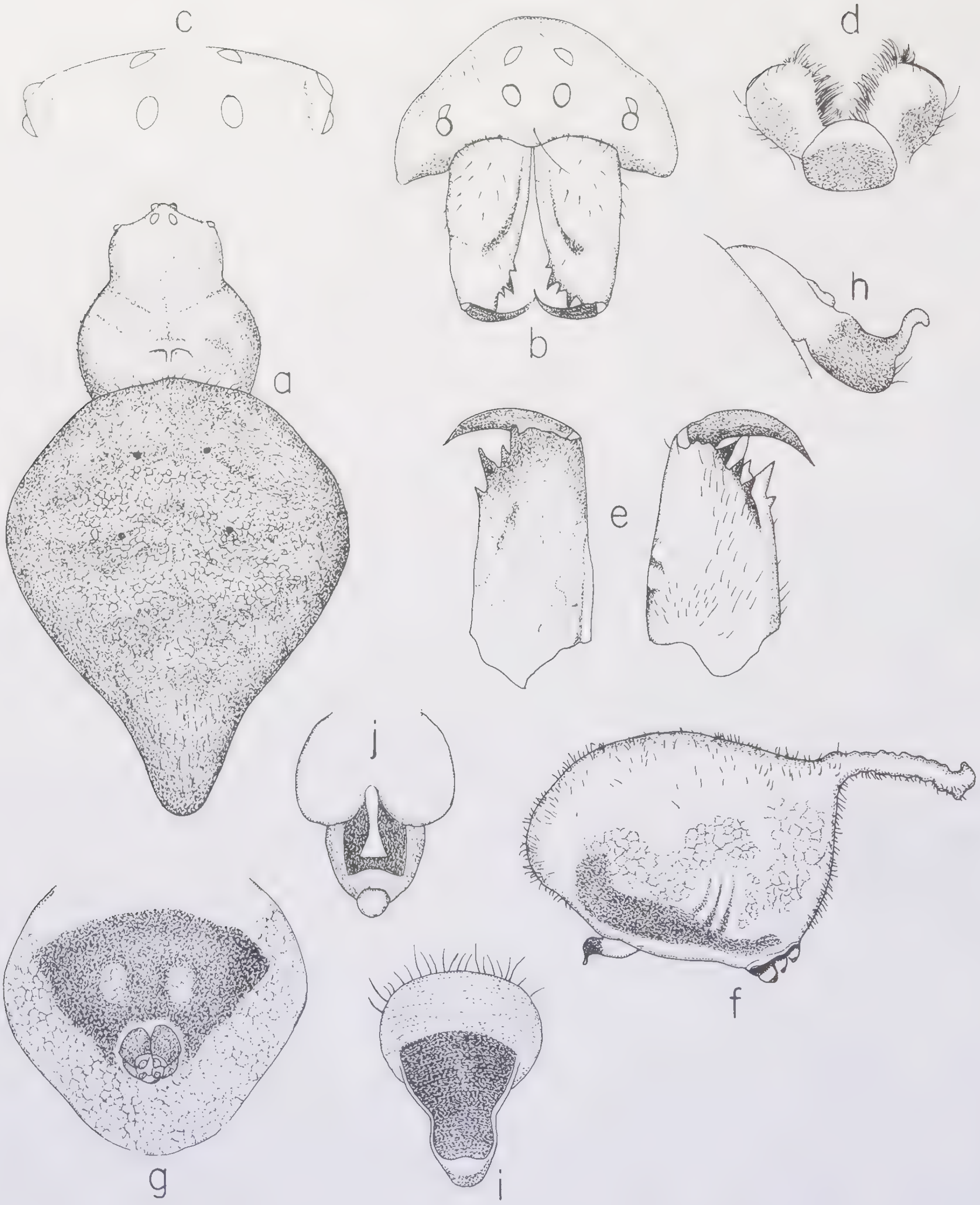


Fig. 408. Female *Eriovixia laglaizei* (Simon) (a); frontal view of cephalothorax (b); eye pattern (c); labium and maxillae (d); chelicerae (e); side (f) and ventral (g) views of abdomen; and side (h), dorsal (i), ventral (j) views of epigynum.

Neoscona laglaizei (Simon) Tikader and Bal, 1981. Rec. Zool. Surv. India Occ. Pap. 24: 27.

Description:

Female: Total length 6.48 mm. Cephalothorax 2.48 mm long, 2.00 mm wide, 0.96 mm high. Abdomen 4.00 mm long, 3.00 mm wide, 1.84 mm high. Cephalothorax yellow, longer than wide, narrowing anteriorly with a pointed part between AME, cephalic area slightly more elevated than thoracic area. Fovea visible and transversely M-shaped. Eight eyes in two rows, margins pale yellow-brown. AE strongly recurved, hirsute anteriorly between AME and AME and between AME and ALE. PE almost straight to slightly recurved. Eye diameter (mm): PME = 0.12, AME = 0.10, PLE = 0.08, ALE = 0.07. Eye separation: AME–AME twice eye diameter, AME–ALE four times AME diameter or 5.7 times ALE diameter, PME–PME 1.83 times eye diameter, PME–PLE 3.63 times PLE diameter. Lateral eyes close to each other and situated on a tubercle. Median ocular quadrangle narrower in front than behind (0.40 : 0.44 mm). Clypeus height 1.3 times AME diameter. Sternum grayish brown, longer than wide, clothed with black hairs. Apical part of sternum strongly concave, posterior portion narrowed to a blunt end. Labium wider than long, crescent-shaped, yellow-brown with pale distal border. Maxillae slightly longer than wide, yellow-brown with pale outer margin and distinct scopulae. Chelicerae yellow, moderately strong, with four promarginal and three retromarginal teeth. Legs yellow to yellowish brown, covered with thin long hairs, peg-like and leaf-like setae, and distinct trichobothria, particularly in the tibiae. Tarsi three-clawed, superior claws each with four to six teeth. Leg formula 1423. Tarsal claw of pedipalp single with 10–12 teeth.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.28	1.08	2.68	2.08	0.88	10.00
2	2.56	1.00	2.04	1.52	0.80	7.92
3	1.80	0.56	1.00	0.80	0.64	4.80
4	1.92	0.72	1.64	1.52	0.72	6.52
Pedipalp	0.68	0.36	0.64	–	0.88	2.56

Abdomen yellowish green, with chalk-white marking and three pairs of sigilla arranged midlongitudinally, cone-shaped posteriorly with a long hump-like tail. Venter gray-brown with two pairs of triangular chalk-white bands posterior to the epigynum (sometimes only one pair visible, when the band is circular and anterior to the moderately short spinnerets). Lateroventral side of abdomen with a blackish gray longitudinal band reaching the spinnerets. Scape of epigynum hooked in lateral view, dorsally with a neck and a roundish anterior bulge. Epigynum in ventral view with a deep cleft in the anterior bulge.

Natural history: Two specimens (one female and one penultimate female) were collected from maize panicles in March.

Material examined: PHILIPPINES: *Mindanao Is*: South Cotabato Prov., Koronadal, Barangay Uno Vill., one female and one young female, 3 March 1983, A.T. Barrion.

Distribution: Philippines (new record), India, Sri Lanka, Burma, Indonesia and Malaysia.

Eriovixia excelsa (Simon)

(Fig. 409a–f)

Glyptogona excelsus Simon, 1889. J. Asiat. Soc. Berg. 58: 337.

Epeira excelsa Bank, 1896. J.N.Y. Entomol. Soc. 4: 90.

Araneus excelsus Simon, 1906. Annls. Soc. Entomol. Fr. 75: 283.

Neoscona excelsus Tikader and Bal, 1981. Rec. Zool. Surv. Ind. Occ. Pap. 24: 25.

Redescription:

Female: Total length 9.00 mm. Cephalothorax 3.00 mm long, 2.70 mm wide, 2.50 mm high. Abdomen 6.00 mm long, 6.00 mm wide, 4.00 mm high. Cephalothorax yellow except the uniformly hirsute and dirty brown cephalic area and black eye margins. Fovea distinctly transverse behind the posterior end of the cephalic area. Eight eyes in two recurved rows, all with black rings except PLE and lustrous eyes except the dull white PLE. AE more strongly recurved than PE. Eye diameter (mm): AME = PME = 0.15, ALE = 0.13, PLE = 0.12. Eye separation: AME = AME 1.6 times eye diameter, AME–ALE three times AME diameter, PME–PME 1.5 times AME diameter, PME–PLE 3.2 times AME diameter. Median ocular quadrangle wider than long and a little narrower in the anterior than the posterior. Clypeus height wide, 1.5 times AME diameter. Sternum grayish with yellow margins towards the posterior, anterior margin strongly concave posterior to the labium, posterior end truncated with small tubercles laterally. Labium wider than long, tapers apically, same color as maxillae and sternum except pale yellow apical one half. Maxillae longer than wide, retromargin light yellow. Chelicerae robust, gray-yellow, except reddish brown fang, promargin bears four teeth with subapical tooth the smallest, retromargin with three equal-sized teeth. Legs long and slender, gray to black, with yellow basal portion of all femora, most of patella, basal one half of tibiae and metatarsi, and brownish tarsi. Leg formula 1243. Pedipalp yellowish gray, with brown tarsi, ca. 0.85 length of femur I.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	4.70	1.80	3.45	2.90	1.05	13.90
2	3.80	1.60	2.90	2.50	1.00	11.80
3	2.30	0.90	1.30	1.35	0.85	6.70
4	3.50	1.10	2.10	2.40	0.90	10.00
Pedipalp	1.00	0.60	0.90	–	1.50	4.00

Abdomen as long as wide, black, with a broad T-shaped chalk-white band dorsally, three pairs of spherical brown sigilla with the median pair biggest. Tip of abdomen black and spinnerets not visible dorsally. Venter of abdomen black except for a pair of ovoid chalk-white spots between epigynum, brownish spinnerets, and yellow epigynal area. Epigynum with a moderately long and wide scape, hirsute except apical end and lateral margins. Tip of scape thinly curved upward and cup-like.

Natural history: All the specimens were collected from irrigated and upland rice in May to August. A large female was from India and small ones from Philippines.

Material examined: PHILIPPINES: *Luzon Is.*, Laguna

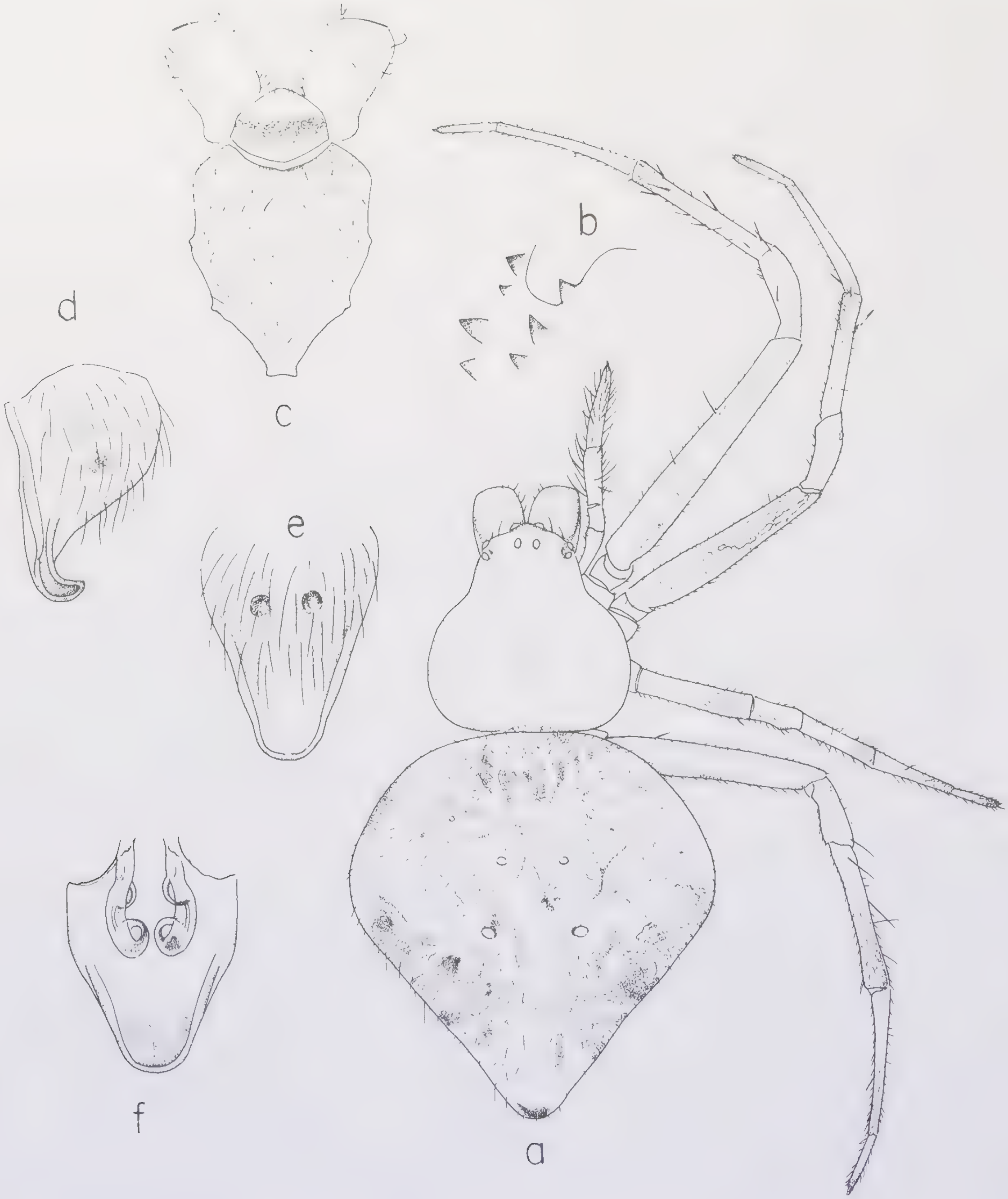


Fig. 409. Female *Eriovixia excelsa* (Simon) (a); cheliceral teeth (b); sternum, labium, and maxillae (c); and lateral (d), dorsal (e), and ventral (f) views of epigynum.

Prov., Los Baños, IRRI Farm, two females, 22 May 1988, A.T. Barrion. **INDIA:** Madurai Agricultural College and Rice Research Institute Farm, one female, June 1990, M.S. Venugopal. **INDONESIA:** Yogyakarta, Klaten, Blabak Vill., one female, 24 August 1989, A.T. Barrion.

Distribution: India, Pakistan, Indonesia and the Philippines (new record).

Genus *Tukaraneus* New Genus

Description: Total length 3.65–7.50 mm. Cephalothorax longer than wide, yellow with brown markings or yellowish brown with fine gray tinge. Anterior cephalic area distinctly narrower than the thorax, bears a snout in front of AME. Fovea distinct, longitudinal or cross-like. Eyes in two strongly recurved rows. Eye diameter:

AME > PME > PLE ≥ ALE. AME separation more than one AME diameter. MOQ wider in front than behind. Sternum longer than wide. Labium subtriangular and yellow apically. Maxillae bear a tubercle basally opposing the base of femora of pedipalp. Chelicera vertical, bears three promarginal and two or three retromarginal teeth. Midpromarginal tooth the largest and closer to basal tooth. Legs with femoral and tibial bands and prominent spines. All but femur I with ventral spines. Tibia II with four to six ventral spines. Metatarsi I and II each with a midprolaterodorsal spine. Metatarsus I/tarsus I = 2.33–2.85. Leg formula 1423 or 1243. Pedipalp's total length more than one half length of femur I. Median apophysis bears two or three teeth, may be swollen basally or concave medially. Embolus very short. Tegulum large. Cymbium wide and boat-shaped with rounded anterior end.

Abdomen subtriangular, yellowish white to chalk-white, with a small posterior tubercle. Venter with a pair of white spots anterior to the spinnerets. Entire set of spinnerets inside a gray ring.

Etymology: Combination of 'tuka' (snout or bill) + *Araneus*, in masculine form.

Type species: *Tukaraneus mahabaeus* n. gen. and sp.

Tukaraneus palawanensis new species

(Fig. 410a–f)

Description:

Male: Total length 3.65 mm. Cephalothorax 1.70 mm long, 1.60 mm wide, 1.00 mm high. Abdomen 1.95 mm long, 1.60 mm wide, 1.40 mm high. Cephalothorax yellowish brown, darker in the narrowed cephalic area and lighter and wider in the thoracic area. Fovea distinctly T-shaped or double anchor-like. Eight eyes in two strongly recurved rows, AME protruded forward and bearing two long spines in between. A short spine at midlength of PME and PLE and a long one posterior to PLE. Eye diameter (mm): AME = 0.14, PME = 0.10, ALE = PLE = 0.08. Eye separation (mm): AME–AME = 0.15, AME–ALE = 0.20, PLE–PME = 0.25, PME–PME = 0.15. MOQ 1.25 times wider in front than behind. Clypeus height small, about 0.35 AME diameter taken just below the eye. Entire frontal clypeus produced into a snout. Sternum yellowish brown, with transverse gray bands and a white one subanteriorly, longer than wide, and truncate posteriorly. Labium yellow in anterior one half. Maxillae yellow with gray tinge basally, apical part flat in ventral view, and each bears a small basolateral spur opposing base of pedipalp's femur. Chelicerae vertical, yellow, with two black to gray longitudinal bands in each. Promargin with three teeth and retromargin with two teeth. Legs yellow with brown bands, femora I–IV each with two brown bands, similar to tibiae I and II, and only on apices of tibiae III and IV and metatarsi III and IV. Spination in femora I = 1-0-3-2, II = 3-4-1-1, III = 3-1-0-1, and IV = 2-2-1-1, tibiae I = 3-1-4-2 and II = 2-5(1-1-1-2)-4-3; metatarsi I and II with a midprolaterodorsal spine each. Tibia II undifferentiated, prolaterals with eight spines. tibia II as long as metatarsus II. Tibia IV subequal to metatarsus IV. Metatarsus I/tarsus I = 2.33. Leg formula 1243. Pedipalp longer than femur IV. Patella without spine. Tibia with five long spines adjacent to its pointed apical structure viewed ventrally. Median apophysis with three teeth and a swollen basal structure.

Length of leg and pedipalp segments (mm):

1	2.20	0.70	1.70	1.30	0.60	6.50
2	1.70	0.60	1.05	1.05	0.55	4.95
3	1.00	0.40	0.60	0.45	0.40	2.85
4	1.35	0.55	0.95	0.95	0.45	4.25
Pedipalp	0.41	0.14	0.15	–	0.73	1.43

Abdomen subtriangular, clothed with long yellow-brown spines, chalk-white, except brown lateral and anterior margins, and three pairs of brown sigilla. Posterior end of abdomen with a small white tubercle. Abdominal venter yellow with gray patches and a pair of white spots anterolateral of gray spinnerets.

Etymology: Named after the type locality.

Natural history: The specimens were collected from yellow pan trap set in the middle of a 45 DT irrigated rice in September.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Narra, holotype male, 29 September 1987, A.T. Barrion; Aborlan, one paratype male, 30 September 1987, A.T. Barrion.

Distribution: Philippines.

Tukaraneus mahabaeus new species

(Fig. 411a–f)

Description:

Male: Total length 7.5 mm. Cephalothorax 3.70 mm long, 2.75 mm wide, 1.55 mm high. Abdomen 3.80 mm long, 3.80 mm wide, 2.60 mm high. Cephalothorax yellow, except a broad brown V-band medially with an anterior arrow band coming from PME and three brown spots along the laterals of thorax and V-band. Fovea brown and cross-like. Eight eyes in two recurved rows. Eye diameter (mm): AME = 0.16, PME = 0.15, PLE = 0.13, ALE = 0.11. Eye separation (mm): AME–AME = 0.25, AME–ALE = 0.33, PME–PME = 0.28, PME–PLE = 0.38. MOQ almost a square, with two long hairs between AME, anterior width as long as height and slightly wider than posterior width. Clypeus produced into a snout, total length about 0.75 MOQ height. Sternum yellow with a gray median spot, distinctly longer than wide. Labium yellow in the subtriangular apical one third and brownish yellow basally. Maxillae yellow, except brown serrula, base with a large tubercle directed towards pedipalp. Chelicerae yellow, vertical with three teeth each in the promargin and retromargin. Midtooth of promargin large and widely separated from apical tooth. Legs spinous, yellow, with two brown bands in femora and tibiae of legs I and II and one brown band

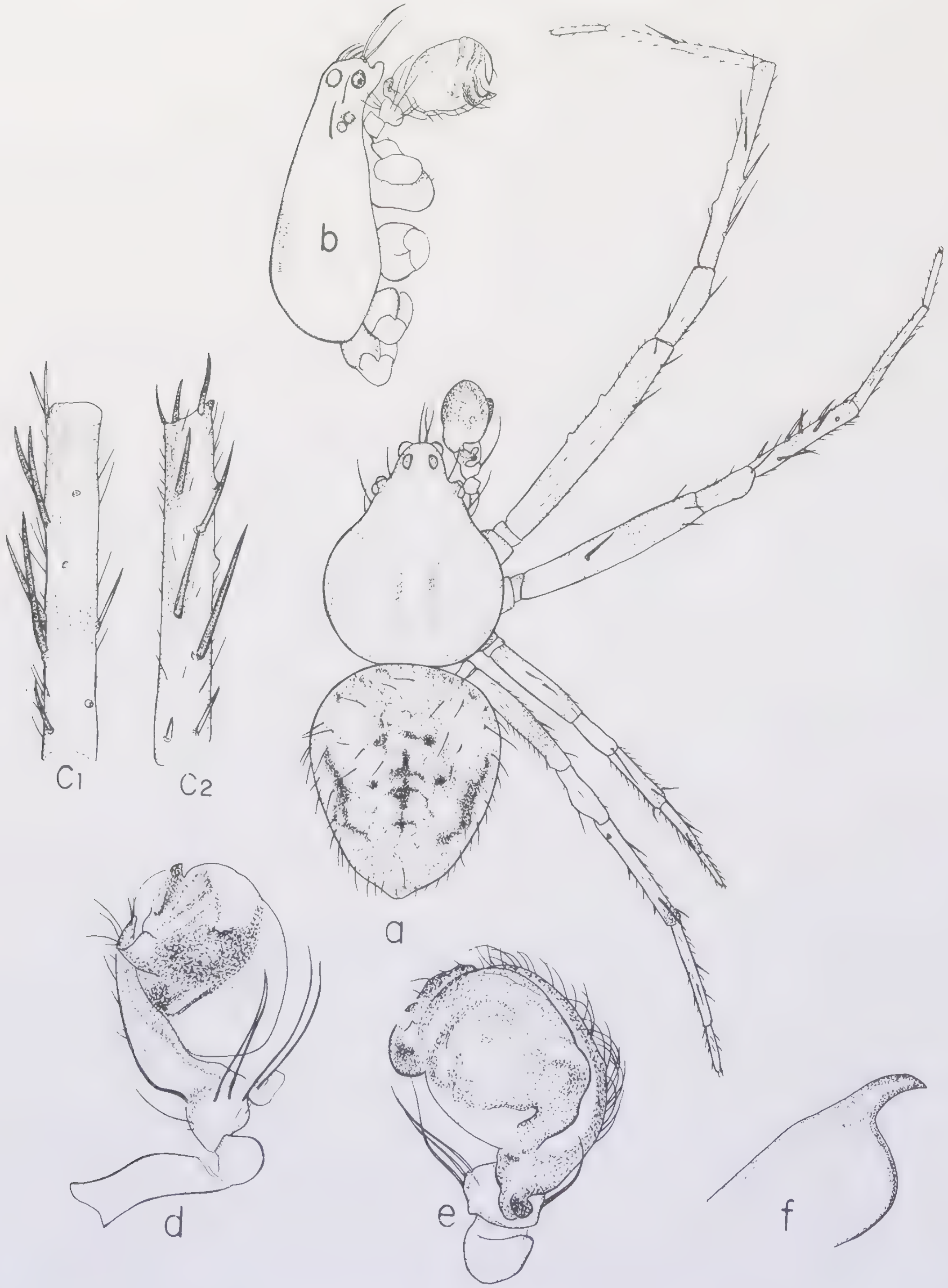


Fig. 410. Male *Tukaraneus palawanensis* n. gen. and sp. (a); side view of carapace (b); dorsal (c_1) and prolateral (c_2) views of tibia II; lateral (d) and ventral (e) views of pedipalp; and median apophysis (f).

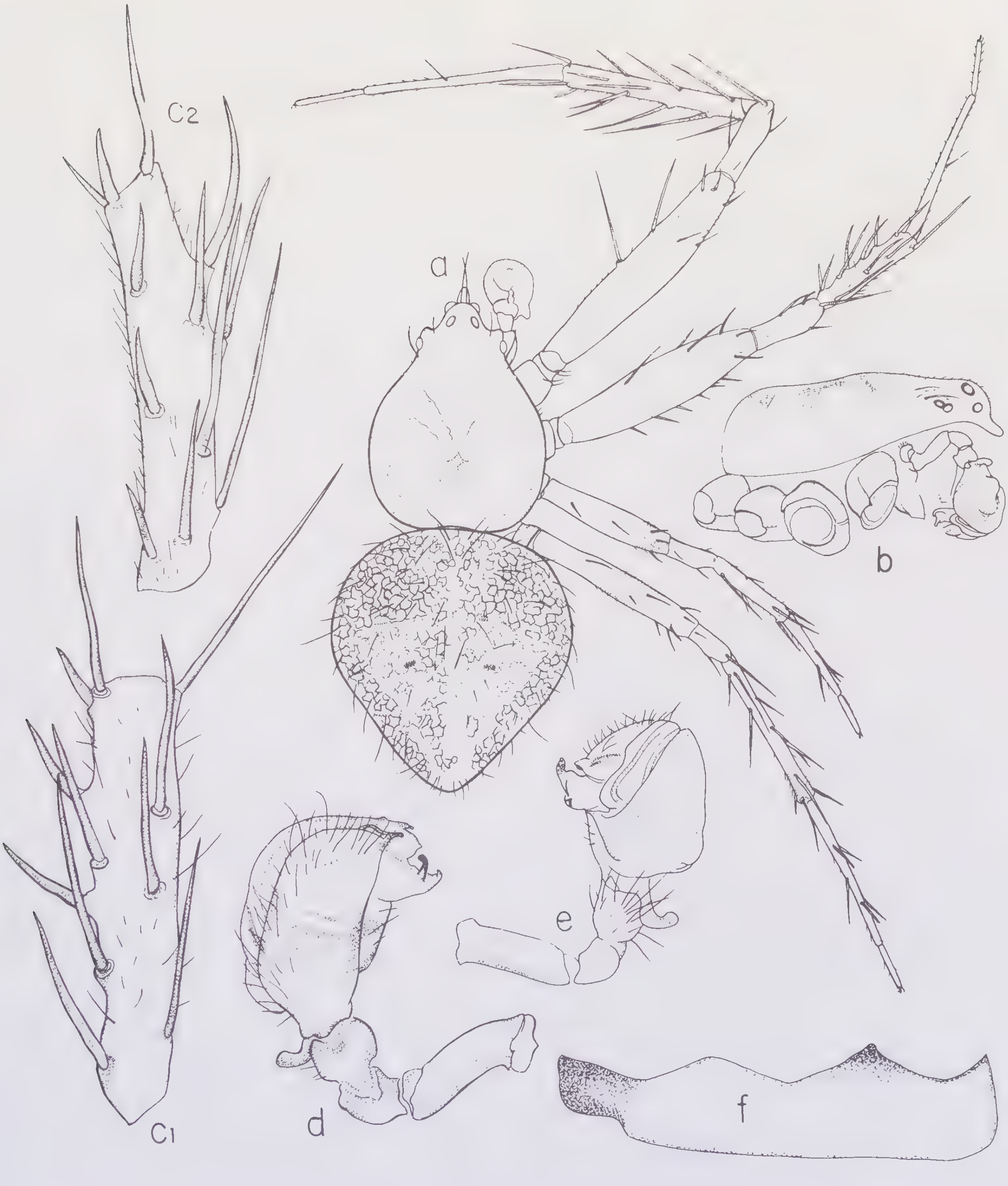


Fig. 411. Male *Tukaraneus mahabaeus* n. gen. and sp. (a); side view of carapace (b); dorsal (c_1) and prolateral (c_2) views of tibia II; lateral (d) and ventral (e) views of pedipalp; and median apophysis (f).

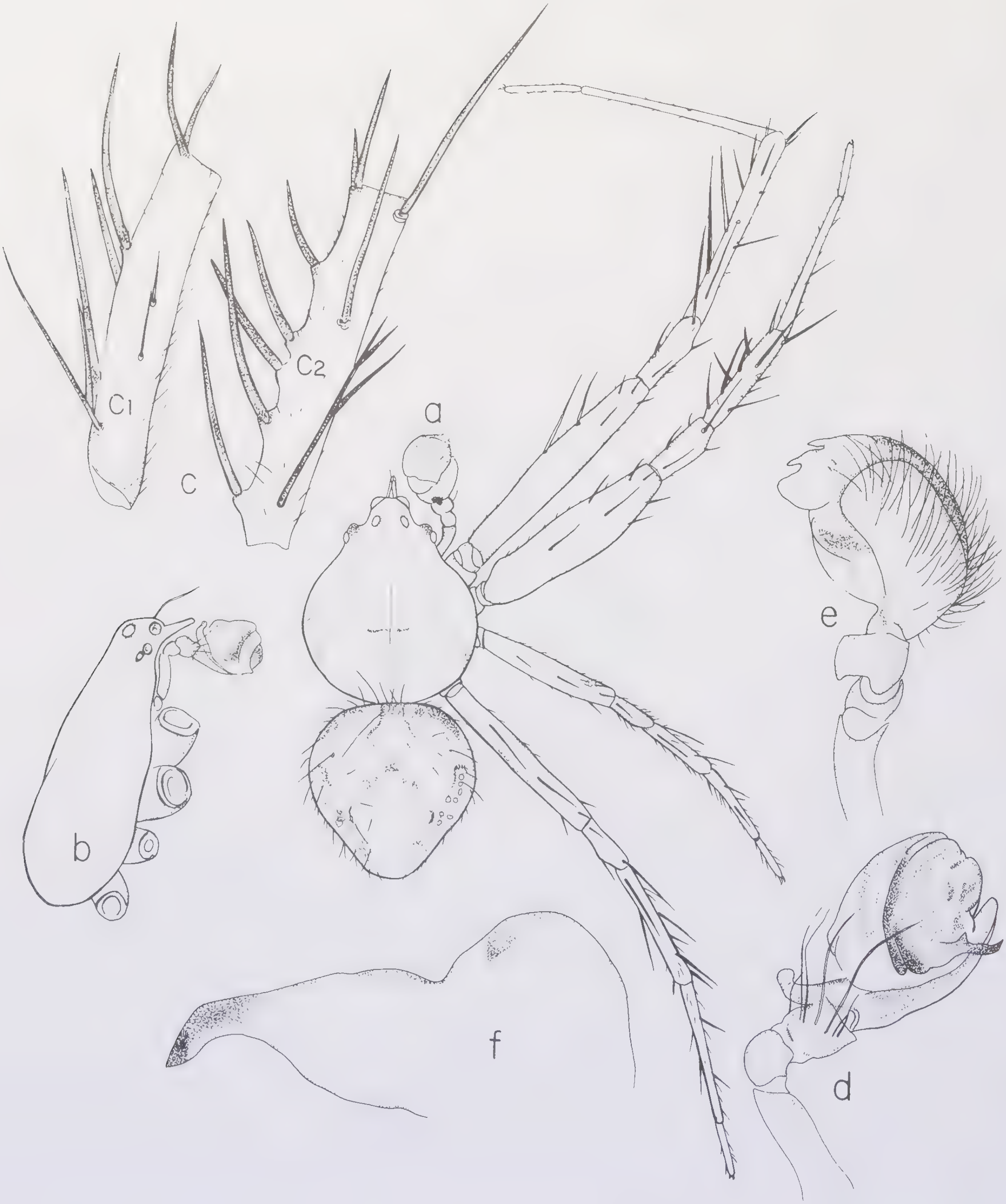


Fig. 412. Male *Tukaraneus patulisus* n. gen. and sp. (a); side view of carapace (b); prolateral (c_1) and dorsal (c_2) views of tibia II; ventral (ds) and lateral (e) views of pedipalp; and median apophysis (f).

in apex of femur III, tibiae III and IV, and middle of femur IV. Spination in femora I = 2-0-3-2, II = 3-6-2-1, III = 3-2-1-1, and IV = 3-7-1-2; tibiae I = 2-6(1-2-1-2)-4-4 and II = 2-6(1-1-2-2)-4-2; metatarsi I and II each with a midposterodorsal spine. Metatarsus I/tarsus I = 2.85. Leg formula 1423. Pedipalp about 0.54 length of femur I. Patella with small tubercle anteriorly, apex of which slightly bifurcate. Tibia slightly pointed retrolaterally and with numerous whitish yellow hairs, and about seven trichobothria dorsally. Paracymbium oblique towards tibia with a curved anterior process. Median apophysis concave at midlength with a curved sclerotized process on both ends.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	3.80	1.30	3.10	2.85	1.00	12.05
2	3.00	1.00	1.75	2.35	1.00	9.10
3	2.40	0.65	1.30	1.30	0.70	6.35
4	3.40	0.80	2.20	2.40	0.75	9.55
Pedipalp	0.45	0.30	0.29	–	1.00	2.04

Abdomen yellowish white, with four brown spots in the middle and a pair of short white spots anteriorly, as long as wide, subtriangular, and clothed with many yellow brown setae and hairs, posterior end with a small tubercle covered with converging yellowish brown hairs. Venter uniformly yellow except a pair of white spots anterior to spinnerets. Spinnerets light brown, converging apically, and entire spinnerets in a gray ring.

Etymology: Named after the long snout in the cephalic area.

Natural history: The holotype male was collected by D-Vac machine in upland rice in October.

Material examined: PHILIPPINES: *Mindanao Is.*, Misamis Oriental Prov., Claveria, Hinaplanan Vill., holotype male, 26 October 1985, E. Libetario.

Distribution: Philippines.

Tukaraneus patulisus new species

(Fig. 412a–f)

Description:

Male: Total length 4.70 mm. Cephalothorax 2.70 mm long, 2.20 mm wide, 1.00 mm high. Abdomen 2.00 mm long, 2.20 mm wide, 0.90 mm high. Cephalothorax yellowish brown with black to reddish brown eye margins, grayish brown Y-band from thorax diverging towards the three setae posterior to lateral eyes, and brownish sides of thorax. Fovea long and cross-like, long part towards mid-PME. Eye diameter (mm): AME = 0.16, PME = 0.14, PLE = 0.10, ALE = 0.09. Eye separation (mm): AME–AME = 0.13, AME–ALE = 0.20, PME–PME = 0.16, PLE–PME = 0.23. MOQ slightly wider in front (0.41 mm) than behind (0.40 mm), MOQ-AW 1.28 times longer than height. Clypeus height small about 0.50 AME diameter, forms a pointed snout. Length of snout as long as MOQ height. Sternum yellow and smooth, longer than wide, and pointed posteriorly between coxae IV. Labium and maxillae both yellowish brown. Maxillae each with a gray pointed tubercle basolaterally. Chelicerae vertical, each row with three teeth. Legs spinous, yellow, except brownish gray venter of tibia II, two brown bands in venter of femur II, apex of femur III, midfemur IV, and apex of tibia IV. Spination in femora I = 2-0-3-1, II = 3-7-2-2, and IV = 3-4-1-1; tibiae I = 3-3-3-6 and II = 3-5(1-1-1-2)-4-2; and metatarsi I and II each with a retrolateral spine in basal 0.4 of leg segment. Metatarsus I/tarsus I = 2.38. Leg formula 1243. Pedipalp's total length about 0.7 length of femur I. Patella without spine. Tibia with seven or eight long whitish yellow setae left of paracymbium and two or three the right side, dorsally with at least four trichobothria. Median apophysis subtriangular, large, with a curved or hooked apical process and a small basal tooth. Cymbium rounded apically and clothed with whitish yellow hairs.

Length of leg and pedipalp segments (mm):

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
1	2.60	0.90	2.20	1.90	0.80	8.40
2	2.10	0.80	1.30	1.60	0.65	6.45
3	1.60	0.55	1.00	0.85	0.55	4.55
4	2.10	0.60	1.40	1.50	0.60	6.20
Pedipalp	0.50	0.25	0.30	–	0.85	1.90

Abdomen subtriangular, whitish yellow, with six pairs of brown sigilla, gray anterior and lateral margins, and with a pair of parallel white bands midanteriorly. Venter yellow except gray lateral margins converging along the gray ring encircling the spinnerets.

Etymology: Named after pointed ('patulis' in Tagalog + us) snout.

Natural history: The holotype male was D-Vac-collected from irrigated rice in October.

Material examined: PHILIPPINES: *Palawan Is.*, Palawan Prov., Brookes Point, holotype male, 2 October 1987, A.T. Barrion.

Distribution: Philippines.

VIII Common Relatives of Spiders

Spiders are among the most diverse groups of animals on earth and rank seventh in global diversity after the first five insect orders – Coleoptera (beetles), Hymenoptera (ants and bees), Lepidoptera (moths and butterflies), Diptera (flies), and Hemiptera (aphids, hoppers, and bugs) – and Acari (mites).

Spiders and their relatives belong to a large class of animals called Arachnida, characterized by the presence of four pairs of legs, two body regions – cephalothorax and abdomen – and simple mouthparts and eyes. The common relatives of spiders are the orders Acari (mites), Opiliones (harvestmen), and Pseudoscorpiones (false scorpions). Levi and Levi (1968) estimated that mites run second to spiders with 20,000 described species, followed by harvestmen (3500 species) and false scorpions (1300 species).

ORDER ACARI

Mites are small to microscopic animals with highly diverse morphology and behavioural characteristics. Their body shape is often ovoid or rounded in outline and elongated to worm-like in specialized forms. They may be categorized into two major forms – free-living and parasitic – based on habit and mode of life. Beneficial and harmful species, however, occur in both forms. Free-living forms include the predacious, phytophagous, and other mites utilizing organic substrate as food. Predacious mites are beneficial to humans and many species in the family Phytoseiidae have been mass-reared and used in biological control of phytophagous mites infesting agricultural crops. The predacious mites comprise complex species in five groups – ground, aerial, storage, littoral and aquatic. Phytophagous mites, particularly of agricultural crops, are enemies of humans, as they adversely affect crop yield. Other free-living forms are found in the mycophagous, saprophagous, microphytophagous, coprophagous and phoretic groups of mites. On the other hand, the parasitic forms are represented only by the ectoparasitic and endoparasitic mites. The parasitic forms commonly use vertebrates – birds, bats, reptiles, etc. – and invertebrates (insects) as their hosts.

ORDER OPILIONES

Harvestmen epitomize the unusual grotesque nature of all arachnids. They are harmless animals with ovoidly short and compact body, and extremely long legs similar to one another. They have segmented opisthosoma without tail-like or spinneret process, but specialize in the development of seemingly functionless ornamentation and modification. Harvestmen or daddy-longlegs differ from spiders in the absence of poison glands and silk-producing apparatus. Some harvestmen are mite-like, but with grooves across the abdomen distinctly separating the segments whereas the mite abdomen is smooth. Most species have two simple eyes located on each side of a mound, appearing like a lookout from midcarapace. They have chelate chelicerae provided with nippers at the base of the second segment and leg-like pedipalps, except in the suborder Laniatores where they are large and armed with spines. Many harvestmen prey on small insects by grasping them with their chelicerae or with the strongly spined palps in the short-legged species. Some species, however, are scavengers, feeding on any dead insects. Mating behaviour is not well demonstrated in harvestmen, and no true prenuptial behaviour has been found.

The harvestmen belong to three suborders, namely, Palpatores (the long-legged species), Laniatores (short-legged species), and Cyphophthalmi (mite-like species). Members of the suborder Palpatores exhibit sexual dimorphism, have huge and awkward chelicerae, bearing only two segments but positioned high above the body, similar to a huge crane, smooth and slender pedipalps in addition to long and slender legs, and have as soft flap covering the reproductive opening. Members of the suborder Laniatores possess extremely stout pedipalps armed with spines and used as grasping arms, are shorter-legged compared to the members of Palpatores, and have a hard hinged plate that covers the opening of the internal pouch just posterior to the legs, which holds the reproductive organs hidden underneath the abdomen. Males in this suborder tend to exhibit two forms commonly associated with one female species. The third suborder Cyphophthalmi consists of small (about 5 mm long) mite-like harvestmen. They are usually dull yellow-brown to dark brown, living under leaf litter and moss, have mounds that are mistaken as eyes on each side of carapace which contain the stink glands, are short-legged and eyeless, sexes not sexually dimorphic, and tarsus IV bears a stout spur from which empty a number of special glands clustered like grapes inside the tarsus.

ORDER PSEUDOSCORPIONES

False scorpions are like baby scorpions at first glance; however, they are miniature scorpions with no stinging tail. They are relatively small animals, barely 6 mm long and have short nipper-like chelicerae with both a movable and a fixed finger projecting underneath anterior of carapace. False scorpions possess huge pedipalps, longer than the body and bearing nippers at tip. Many species are blind but some have one or two pairs of small eyes on the margins of the carapace. They are commonly found underneath loose bark of tree trunks, litter of the forest floor, or under stones in open fields, and are considered good hunters. The prey is usually small wingless insects, like the collembolans, which are rapidly poisoned by the liquid substance oozing from one or both of the fingers passing to the chelicerae. Aside from feeding function, the chelicerae produce silk similar to spiders and mites. The silk is mainly used to make retreat houses where the false scorpions pass their defenseless stages of life – during molting, egg oviposition, and hibernation (Forster and Forster, 1973). The retreat houses are often dome-shaped, covered with small pieces of debris, and attached to their surroundings.

A comprehensive treatment of spiders and their relatives is presented by Levi and Levi (1968) and Forster and Forster (1973). Additional information is provided by Borror *et al.* (1976) and Gertsch (1979).

IX

Spider Diversity in Philippine Rice Environments

Philippine ricefields represent three kinds of rice environments – upland (U), rainfed wetland (RW), and irrigated (I). Upland fields are non-flooded and non-puddled, whereas rainfed wetland and irrigated fields are bunded to impound water and are prepared puddled or non-puddled.

In all three rice environments, representing 17 sampling sites in ten provinces, a total of 13,270 specimens belonging to 51 species under 34 genera and 16 families were collected over a 3-year period from 1977 to 1980 (Barrion and Litsinger 1984). The whole collection represents three guilds – orb-weavers (OW), hunters (HS), and space-webs (SW). The orb-weavers are the most preponderant and comprise 66% of all individuals, followed by the space webs and hunters, with 19% and 16%, respectively. In terms of number of species, the order of abundance according to guild is orb-weavers (45%) > hunters (39%) > space web (16%) (Fig. 413, top). The orb-weaver composition include the family Tetragnathidae (12 species in three genera), Araneidae (ten species in six genera), and Theridiosomatidae (one species). The most common orb-weaver genera are *Tetragnatha*, *Araneus*, and *Argiope*. Hunters, on the other hand, consist of families, dominated by the family Lycosidae (five species in three genera), Thomisidae (five species in four genera), Clubionidae (three species in two genera), Salticidae (three species in three genera), and one species each in Gnaphosidae, Oxyopidae, Pisauridae, and Sparassidae (= Eusparassidae). The genera *Pardosa* of family Lycosidae and *Oxyopes* of Oxyopidae are the hunter counterparts of the orb-weavers. The space web represents the third guild and contains only three families – Theridiidae (four species

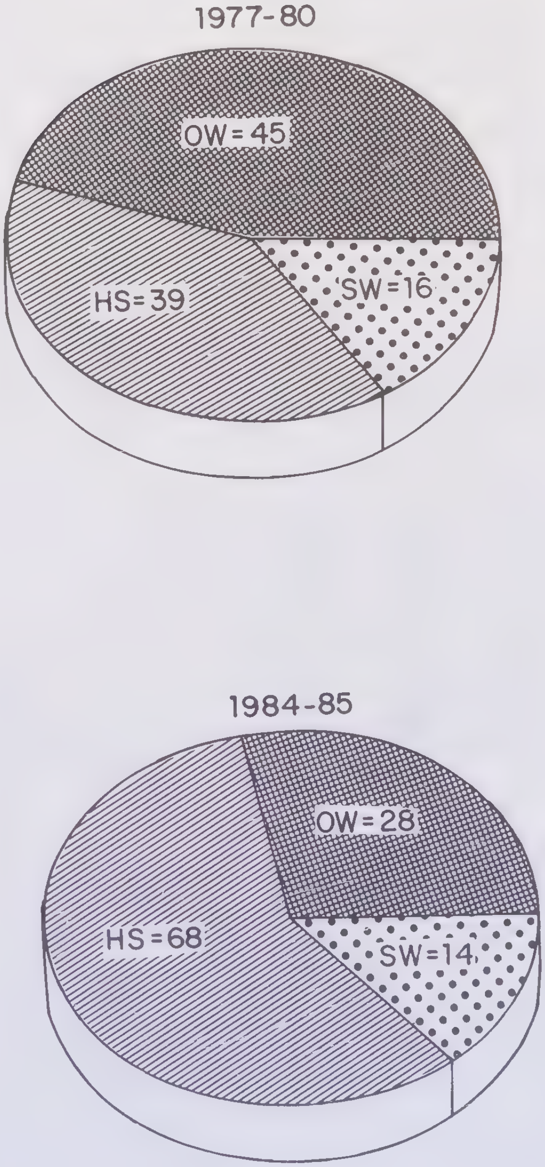


Fig. 413. Spider guild composition of Philippine rice agroecosystems (OW = orb-weavers, HS = hunting spiders, SW = space-web spiders); top pie after Barrion and Litsinger (1984).

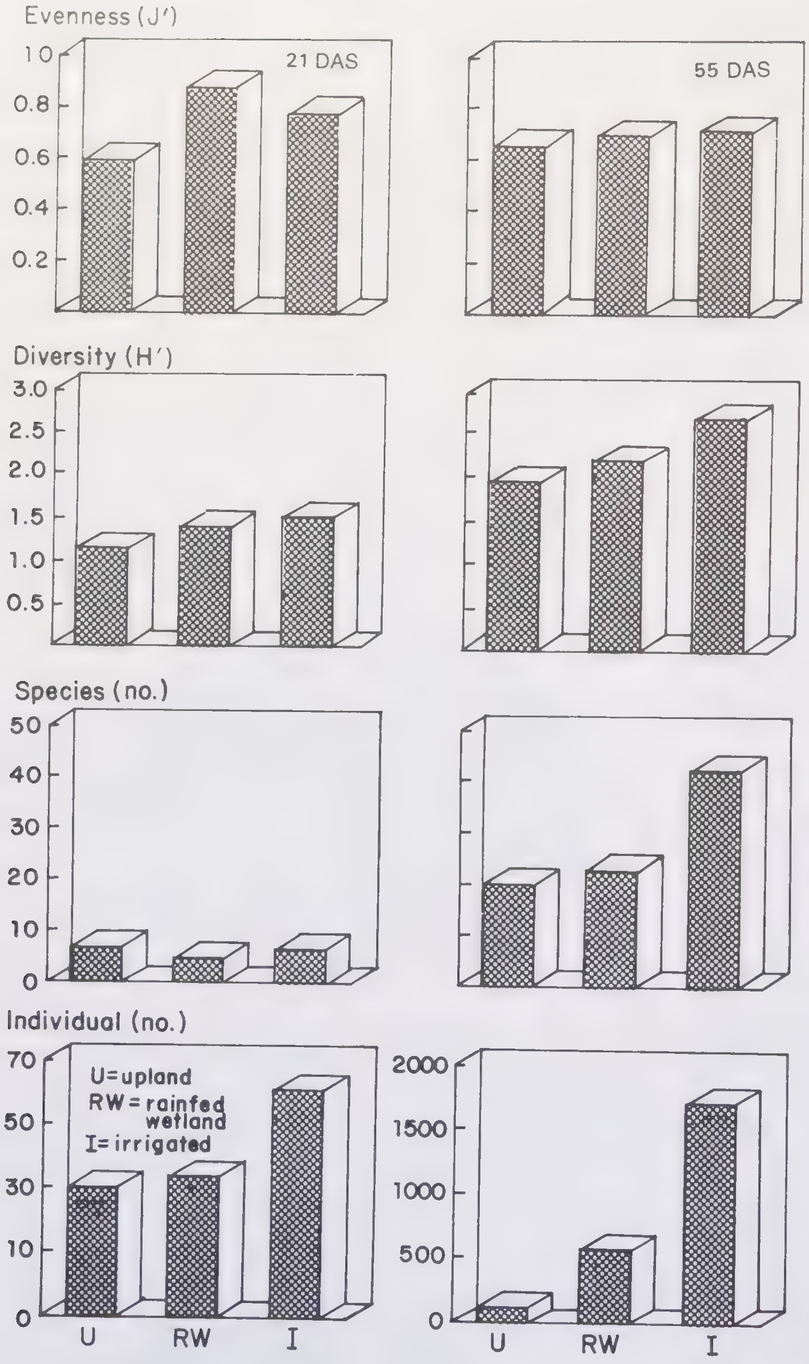


Fig. 414. Spider diversity in three rice environments (U = upland, RW = rainfed wetland, I = irrigated) at 31 and 65 days after seeding (DAS) in the Philippines.

in four genera), Linyphiidae (three species in three genera), and Agelenidae (one species). The linyphiid genus *Atypena* is the single most dominant species (Barrion and Litsinger 1984). However, intensive trapping methods – pitfall, yellow pan, and kerosene light – in 1984–85 in Luzon Is. (sites L2, L5, L9, L26, L32) and Mindanao Is. (sites M6 and M7) and quadrupling of the sampling sites increased the total number of individuals almost 1.5 times (18,551 specimens) and the number of species by 6.4 times (327 species) compared to the 1977–1980 period. The trap collections were dominated by the hunting spiders (HS) > orb-weavers (OW) > space webs (SW) (Fig. 413, bottom). The hunters are represented by four big families – Clubionidae (40 species in nine genera) > Thomisidae (38 species in 18 genera) > Salticidae (35 species in 21 genera) > Lycosidae (26 species in nine genera) constituting 74% of the total hunters. The second guild belongs to the orb-weavers with 28%, dominated by the Araneidae (59 species in 17 genera) > Metidae (14 species in five genera) > Tetragnathidae (13 species in three genera). Space-web spiders occupy the third group with only

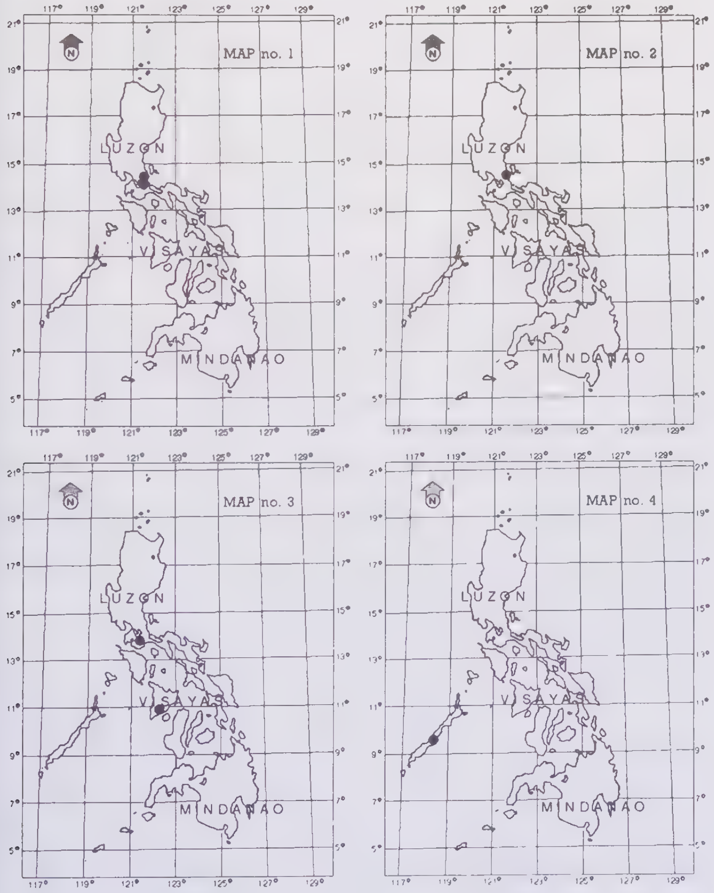
14%. The theridiids, with 39 species scattered in 14 genera, almost solely represent the space webs.

Intensive uniform samplings taken at 31 and 65 DAS from 1.05 m^2 marked plots in each of the three environments – upland (U), rainfed wetland (RW), and irrigated (I) ricefields – revealed that spider richness and diversity increased with crop age. The number of individuals increased 19-fold from a low of 127 at 31 DAS to 2458 at 65 DAS. The order of rank in decreasing pattern is I > RW > U. The irrigated ricefields produced 62 individuals, seven species, and H' value of 1.52 at 31 DAS compared to 1747 individuals, 45 species, and H' value of 2.72 at 65 DAS. Upland ricefields yielded the least, with 31 individuals, seven species, and $H' = 1.16$ at 31 DAS and had 142 individuals, 20 species, and $H' = 1.98$ at 65 DAS. Rainfed wetland ricefields were intermediate and showed similar trends in all aspects at both crop stages (Fig. 414).

Spider species diversity was generally more even between rainfed wetland and irrigated ricefields at 65 DAS compared to upland, as shown in Fig. 414. The J' values are close between I (0.72) and RW (0.70). The upland has only 0.66. However, at 31 DAS the J' values are higher than at 65 DAS and the order of rank is RW (0.88) > I (0.78) > U (0.60).

X Distribution Maps of Riceland Spiders

Note: Distribution maps include all specimen records encountered earlier but not examined in the preparation of this monograph.


MAP no. 1
MAP no. 2
MAP no. 3
MAP no. 4
N
LUZON
VISAYAS
MINDANAO
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119°
121°
123°
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127°
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21°
19°
17°
15°
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11°
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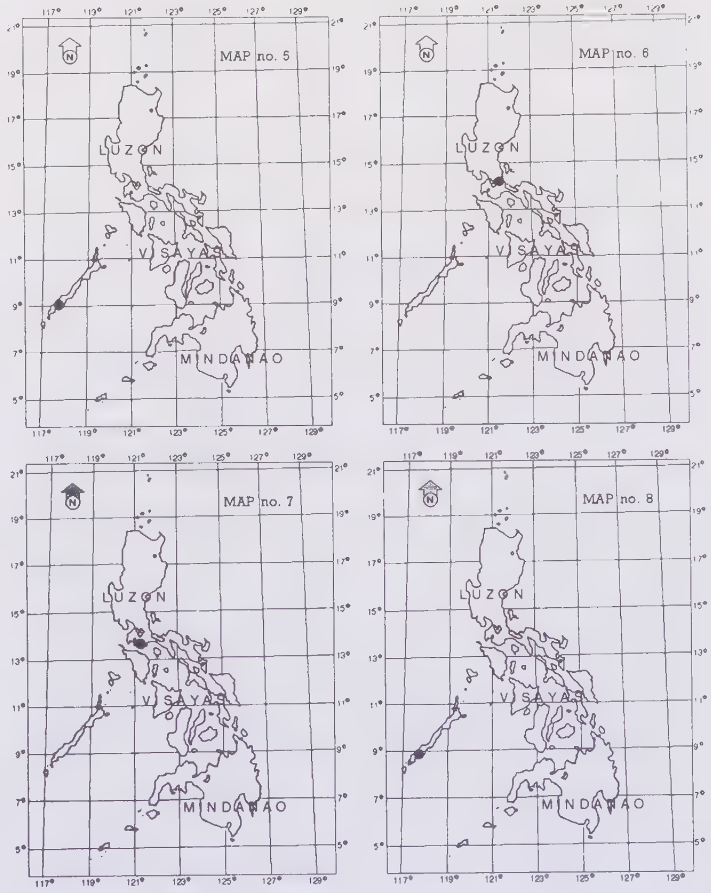
7°
5°

Maps 1–4. Distribution of *Baccallbrapo bundokalbo* n. gen. and sp. (1); *Idioctis sierramadrensis* n. sp. (2); *Zosis geniculatus* (Olivier) (3); and *Miagrammopes maigsieus* n. sp. (4).


MAP no. 5
MAP no. 6
MAP no. 7
MAP no. 8
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VISAYAS
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15°
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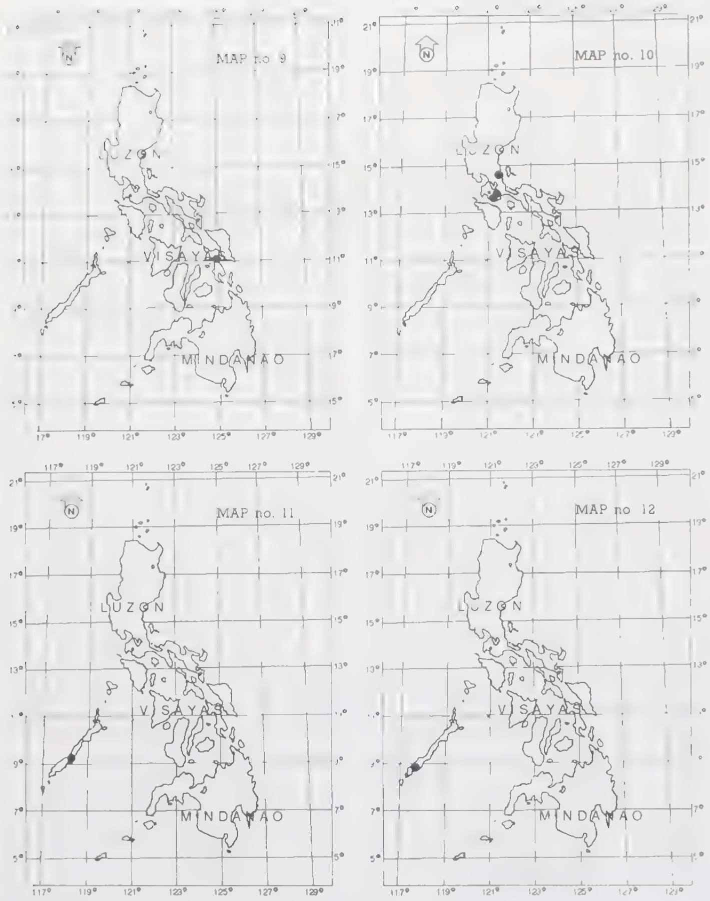
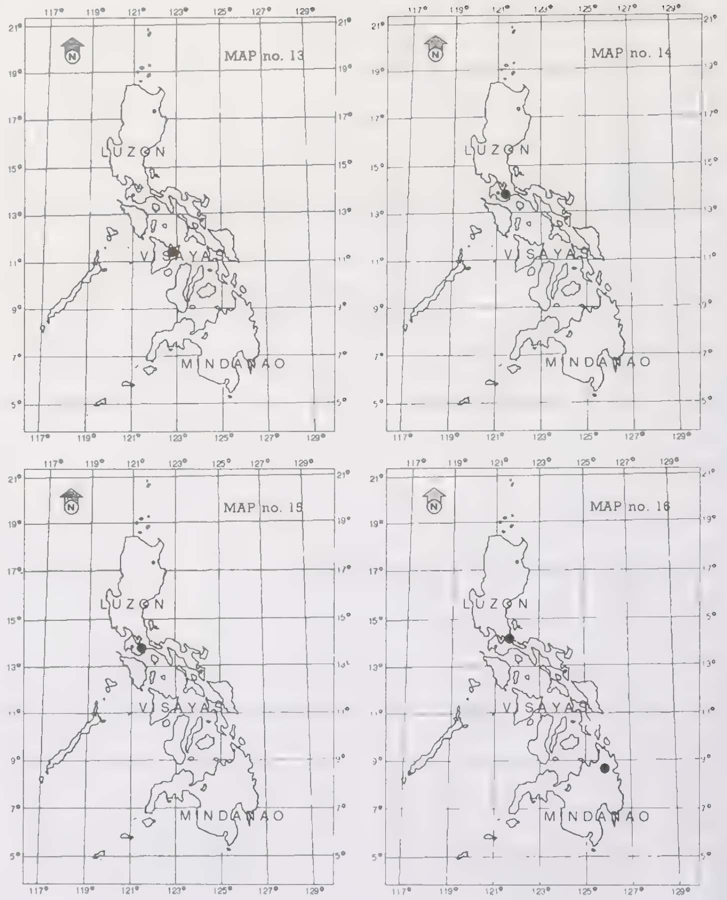
9°
7°
5°

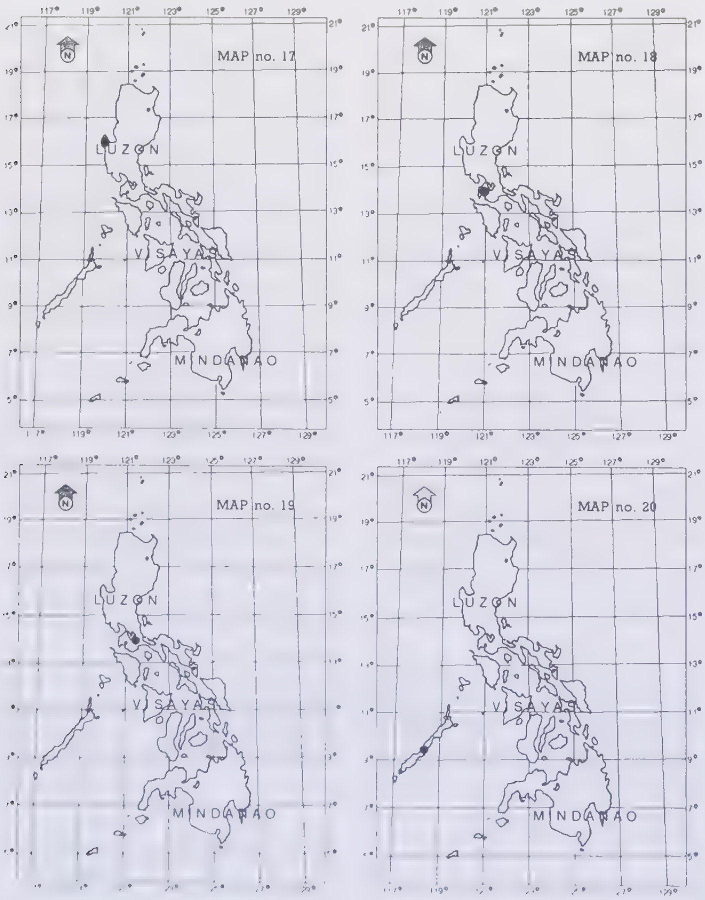
Maps 5–8. Distribution of *Miagrammopes brooksptensis* n. sp. (5); *Dictyna siniloanensis* n. sp. (6); *Opopaea batangueña* n. sp. (7); and *Artema* sp. (8).


MAP no. 9
MAP no. 10
MAP no. 11
MAP no. 12
LUZON
VISAYAS
MINDANAO

Maps 9–12. Distribution of *Pholcus phalangioides* (Fuesslin) (9); *Scytodes thoracica* (Latreille) (10); *Spartaeus uplandicus* n. sp. (11); and *Phaeacius mainitensis* n. sp. (12).


MAP no. 13
MAP no. 14
MAP no. 15
MAP no. 16
LUZON
VISAYAS
MINDANAO

Maps 13–16. Distribution of *Emathis astorgasensis* n. sp. (13); *Emathis makilingensis* n. sp. (14); *Myrmarachne bidentata* Banks (15); and *Myrmarachne markaha* n. sp. (16).


MAP no. 17
MAP no. 18
MAP no. 19
MAP no. 20
LUZON
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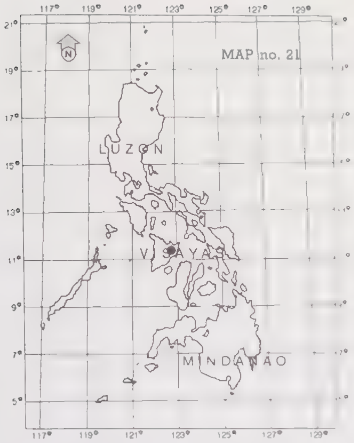
Maps 17–20. Distribution of *Myrmarachne pinakapalea* n. sp. (17); *Myrmarachne vulgarisa* n. sp. (18); *Myrmarachne caliraya* n. sp. (19); and *Myrmarachne onceana* n. sp. (20).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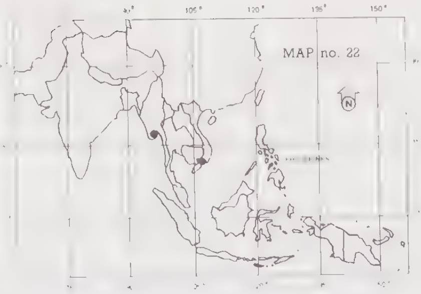
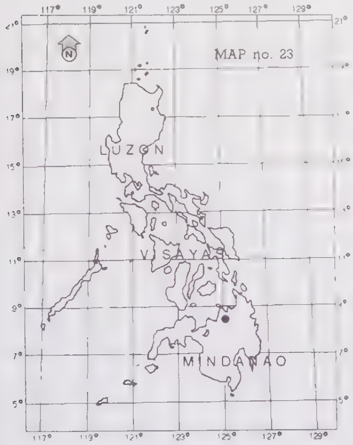


Maps 21–24. Distribution of *Myrmarachne pinoysorum* n. sp. (21); *Bianor hotingchiehi* Schenkel (22); *Gangus manipisus* n. sp. (23); and *Hyllus maskaranus* n. sp. (24).

Maps 25–28. Distribution of *Epeus edwardsi* n. sp. (25a); *Epeus hawigalboguttatus* n. sp. (25b); *Cosmophasis estrellaensis* n. sp. (26); *Cosmophasis parangpilota* n. sp. (27); and *Cosmophasis trioipina* n. sp. (28).

Maps 29–32. Distribution of *Phintella bunyiae* n. sp. (29); *Phintella piatensis* n. sp. (30); *Mantisatta longicauda* Cutler and Wanless (31); and *Telamonia masinloc* n. sp. (32).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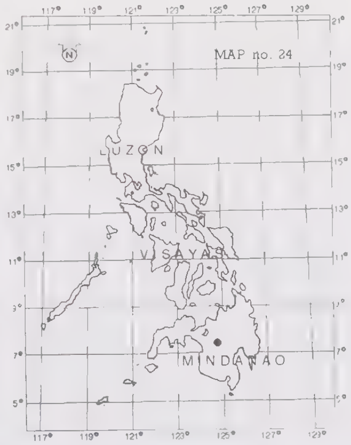
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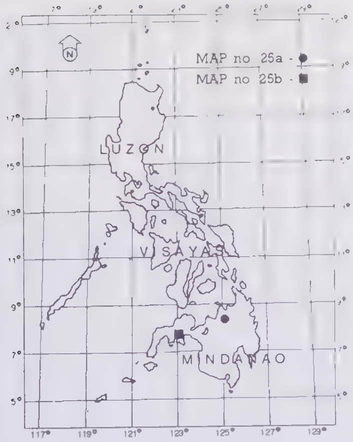
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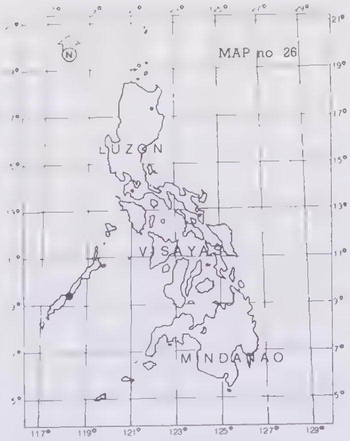
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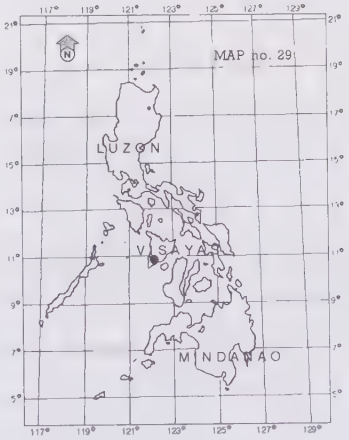
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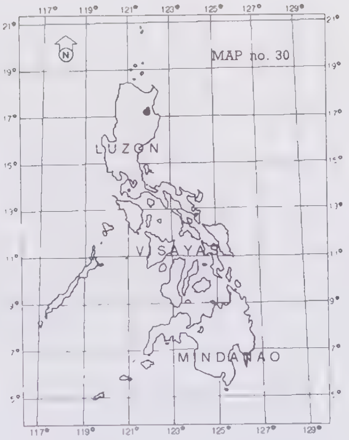
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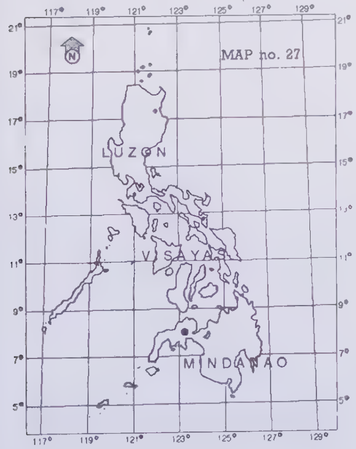
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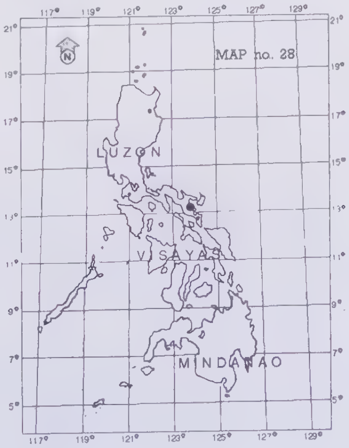
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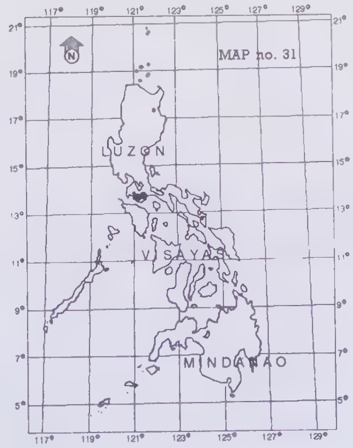
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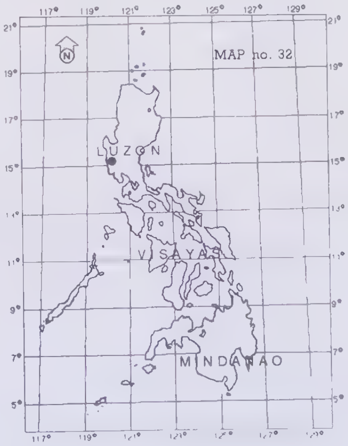
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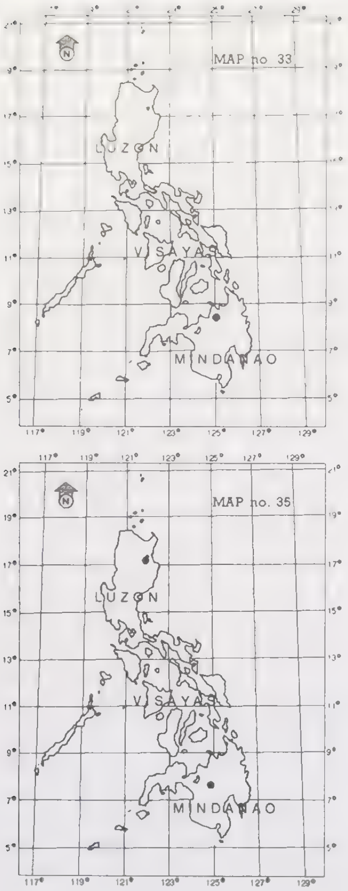
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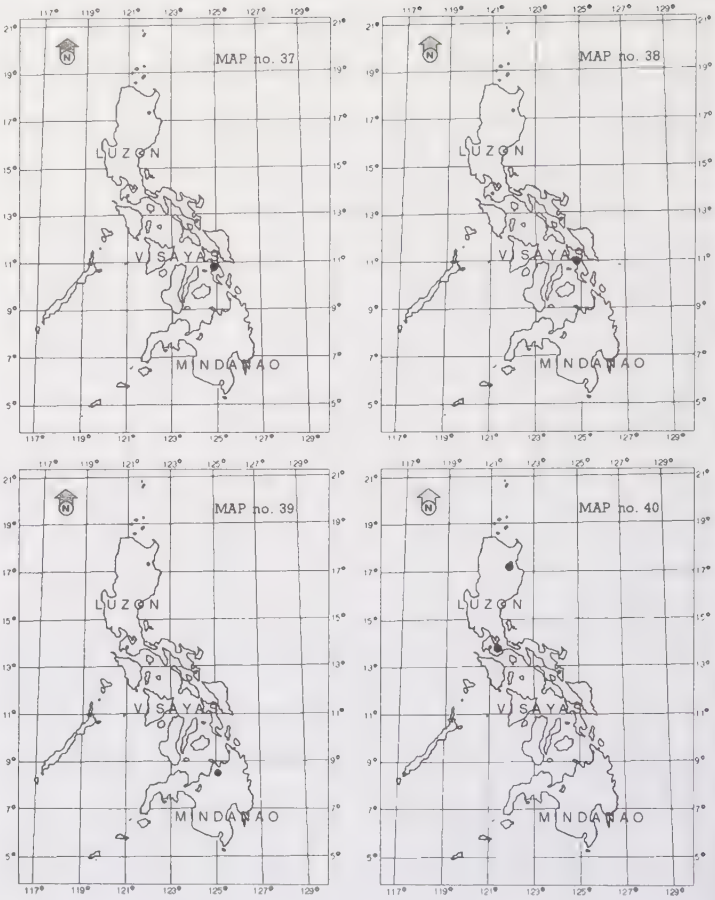
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MAP no. 39
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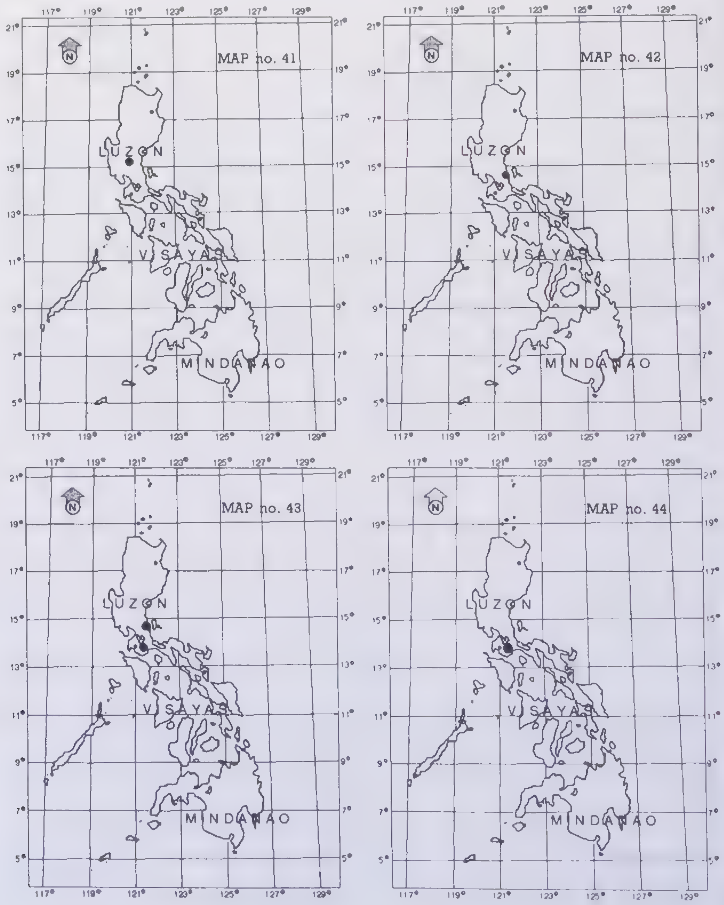
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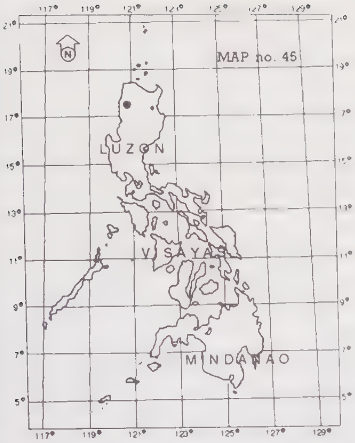
Maps 33–36. Distribution of *Telamonia parangfestiva* n. sp. (33); *Plexippus calcuttaensis* (Tikader) (34); *Plexippus petersi* (Karsch) (35); and *Plexippus paykulli* (Audouin) (36).

Maps 37–40. Distribution of *Thiania viscaensis* n. sp. (37); *Rhene hinlalakea* n. sp. (38); *Rhene habahumpa* n. sp. (39); and *Harmochirus brachiatus* (Thorell) (40).

Maps 41–44. Distribution of *Hasarius adansoni* (Audouin)(41); *Gambaquezonia itimana* n. gen. and sp. (42); *Chalcotropis luceroi* n. sp. (43); and *Simaetha damongpalaya* n. sp. (44).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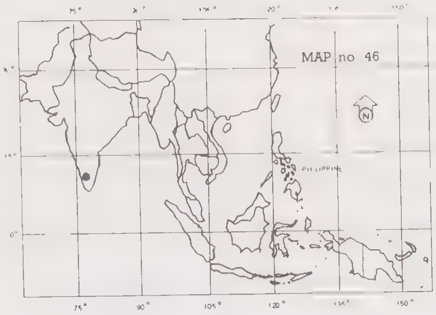
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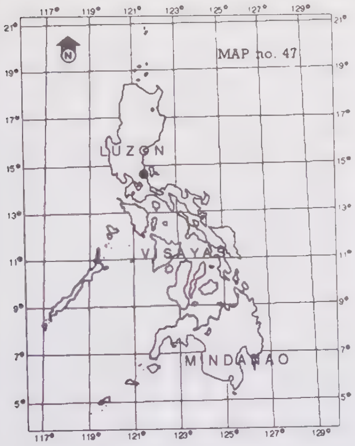
PHILIPPINES

Maps 45–48. Distribution of *Simaetha makinanga* n. sp. (45); *Clubiona drassodes* O.P. Cambridge (46); *Clubiona charleneae* n. sp. (47); and *Clubiona gallagheri* n. sp. (48).

Maps 49–52. Distribution of *Clubiona japonicola* Boesenberg and Strand (49); *Clubiona pahilistapyasea* n. sp. (50); *Clubiona pototanensis* n. sp. (51); and *Clubiona kapataganensis* n. sp. (52).

Maps 53–56. Distribution of *Clubiona topakea* n. sp. (53); *Clubiona hugisva* n. sp. (54); *Clubiona victoriaensis* n. sp. (55); and *Clubiona dikita* n. sp. (56).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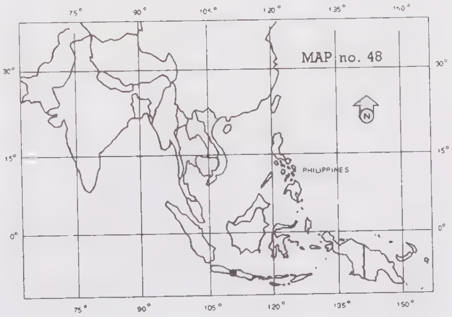
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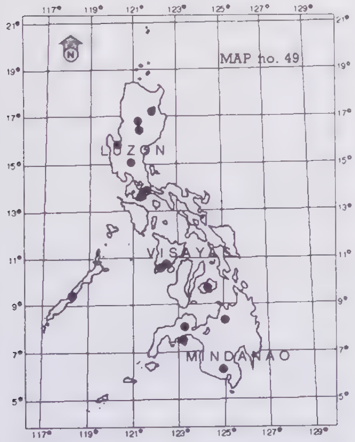
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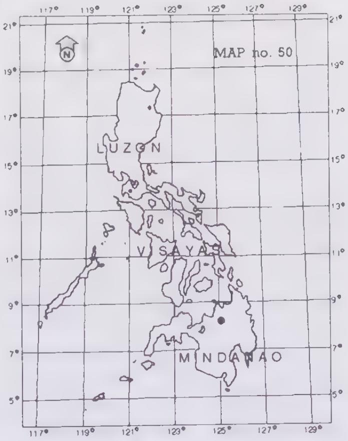
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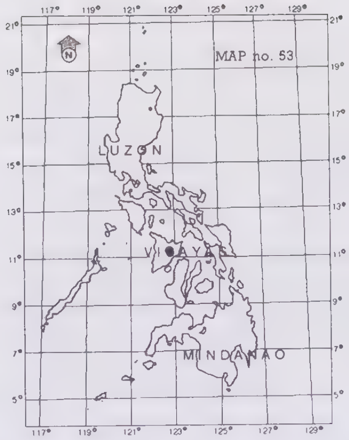
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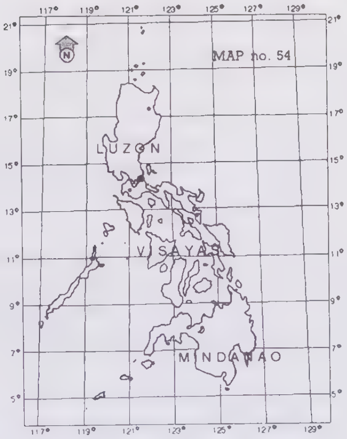
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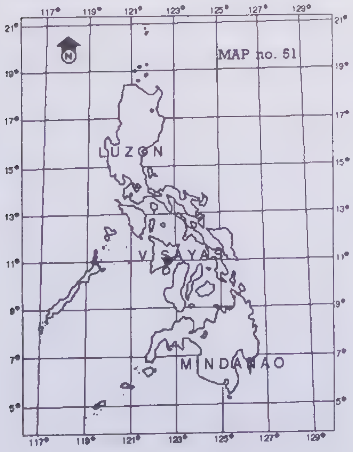
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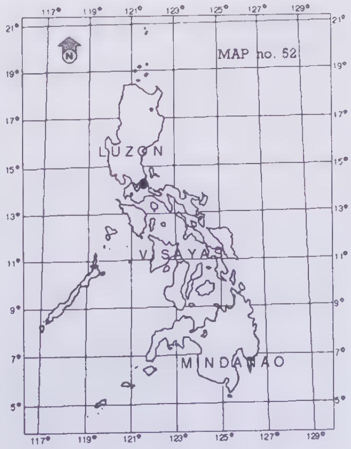
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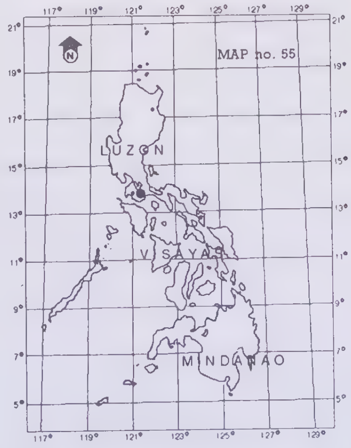
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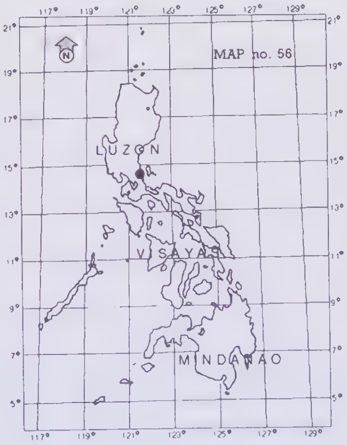
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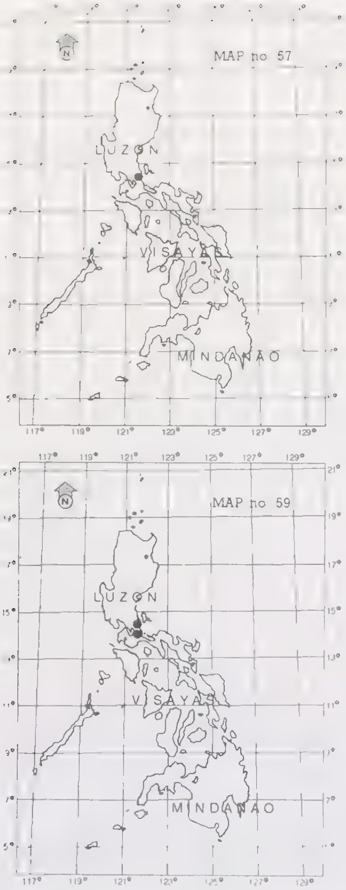
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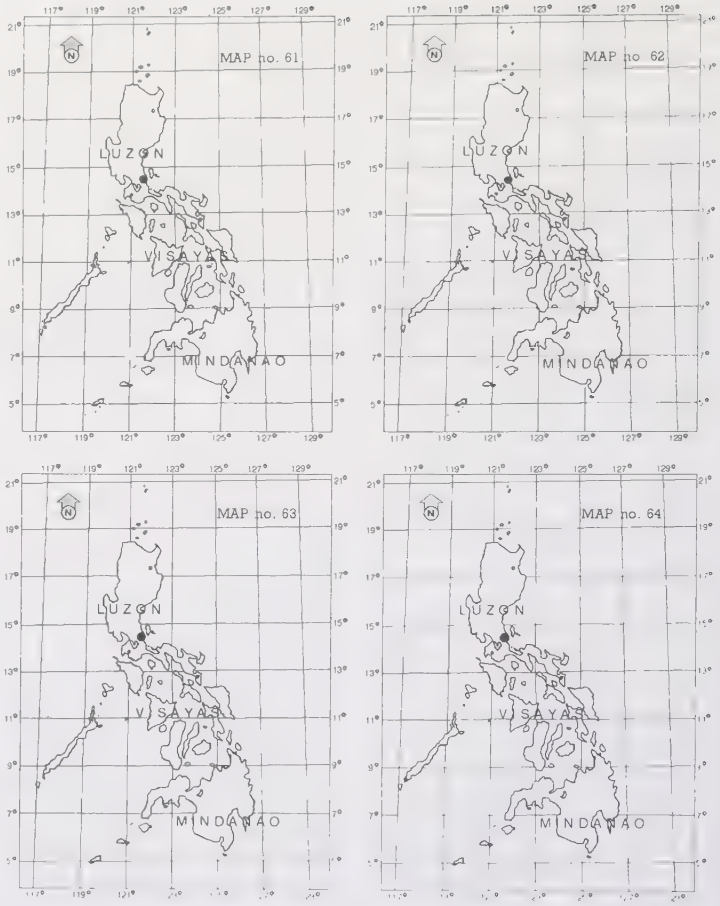
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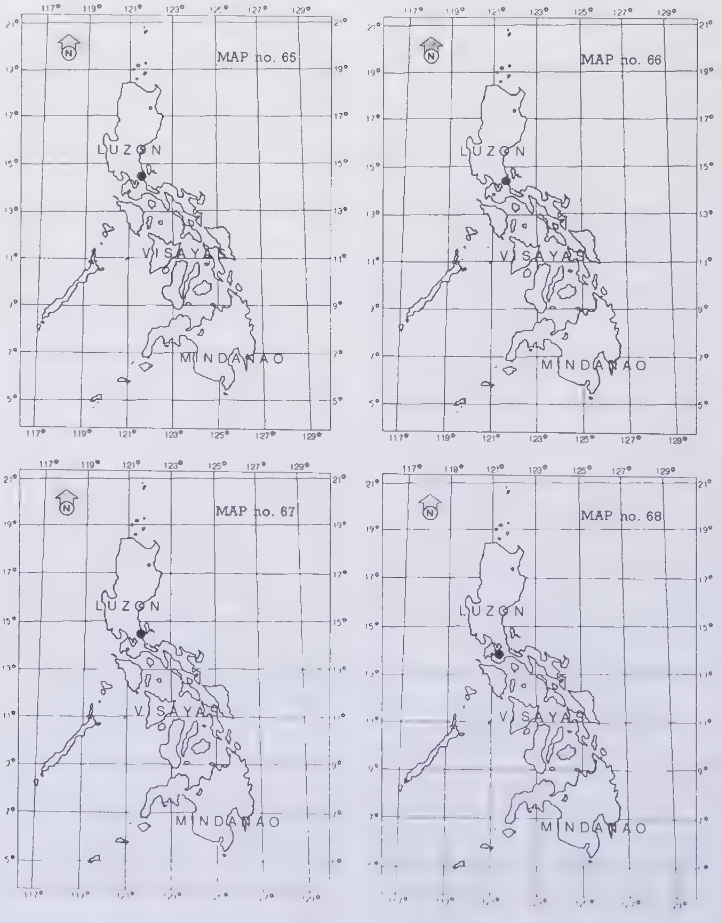
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MAP no. 67
MAP no. 68
LUZON
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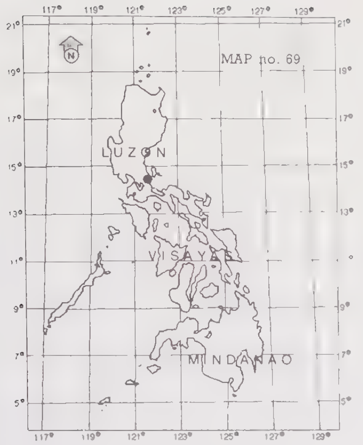
Maps 57–60. Distribution of *Clubiona unanoa* n. sp. (57); *Clubiona krisisensis* n. sp. (58); *Clubiona katioryza* n. sp. (59); and *Clubiona paranghinlalakirta* n. sp. (60).

Maps 61–64. Distribution of *Clubiona venusae* n. sp. (61); *Clubiona maysangarta* n. sp. (62); *Clubiona hugispaa* n. sp. (63); and *Clubiona leonilae* n. sp. (64).

Maps 65–68. Distribution of *Clubiona zandstrai* n. sp. (65); *Clubiona parangunikarta* n. sp. (66); *Clubiona unikarta* n. sp. (67); and *Clubiona manipisea* n. sp. (68).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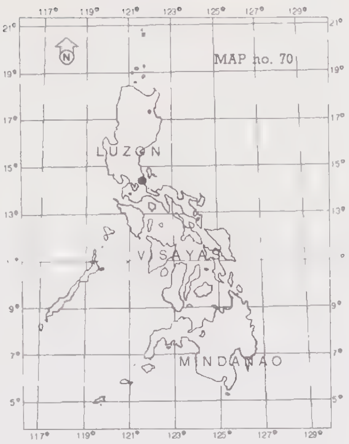
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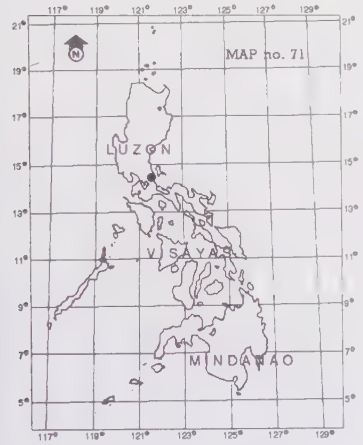
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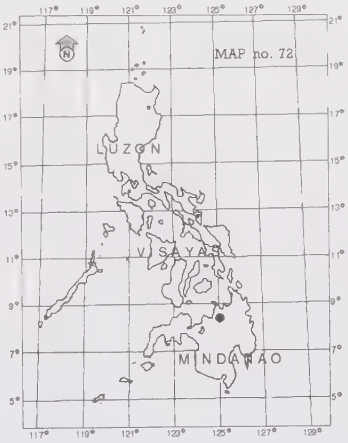
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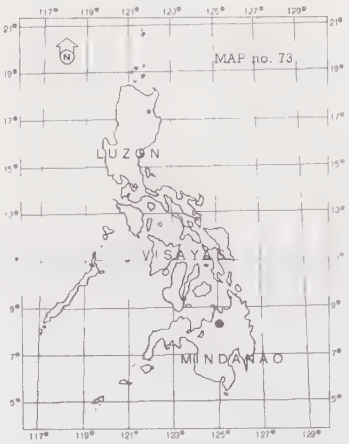
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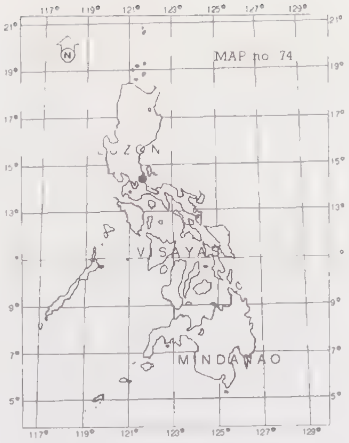
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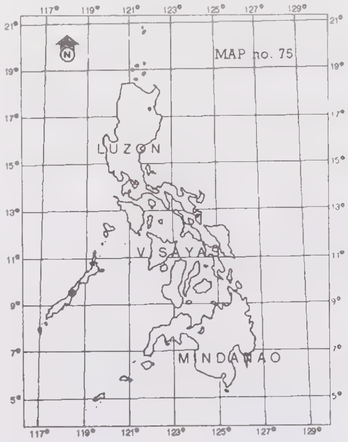
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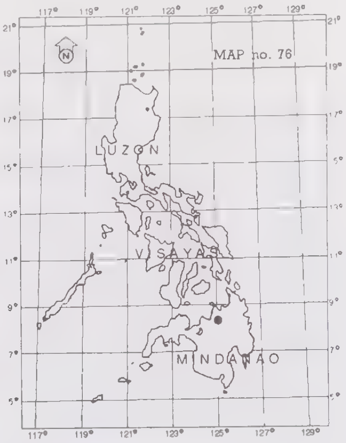
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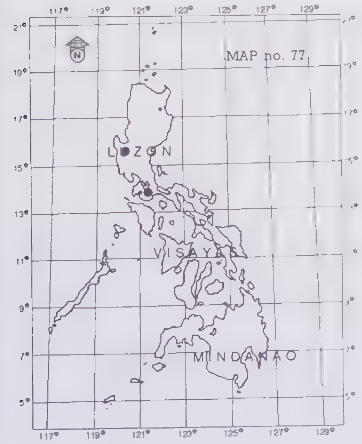
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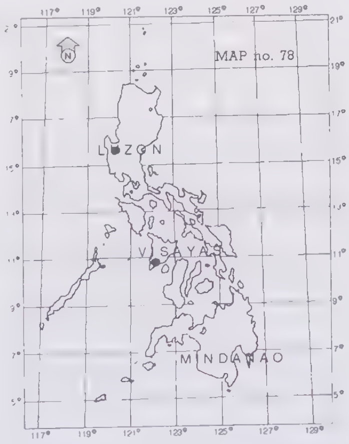
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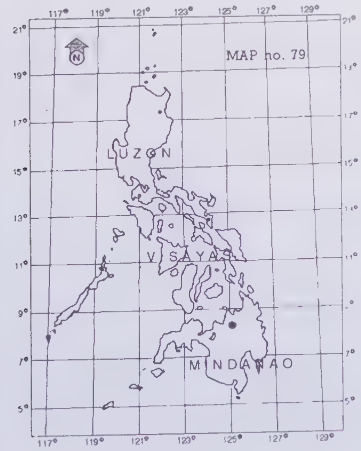
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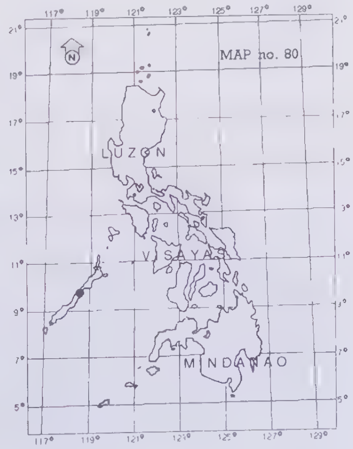
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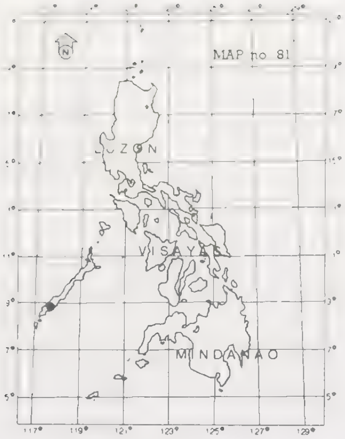
Maps 69–72. Distribution of *Clubionoides kawitpaaia* n. sp. (69); *Clubionoides bukaea* n. sp. (70); *Clubionoides turongdaliriana* n. sp. (71); and *Kakaibanoides paranga* n. gen. and sp. (72).

Maps 73–76. Distribution of *Cheiracanthium daquilium* n. sp. (73); *Cheiracanthium liplikeum* n. sp. (74); *Cheiracanthium payateus* n. sp. (75); and *Cheiracanthium itakeus* n. sp. (76).

Maps 77–80. Distribution of *Cheiracanthium ligawsolanum* n. sp. (77); *Cheiracanthium tigbauanensis* n. sp. (78); *Cheiracanthium tingilium* n. sp. (79); and *Cheiracanthium bikakapenalcolium* n. sp. (80).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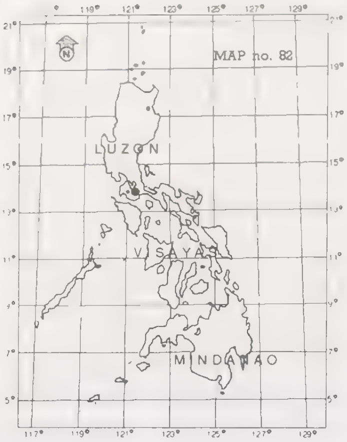
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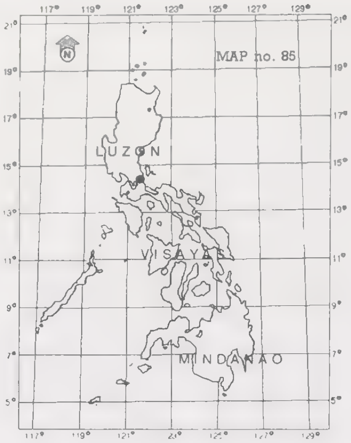
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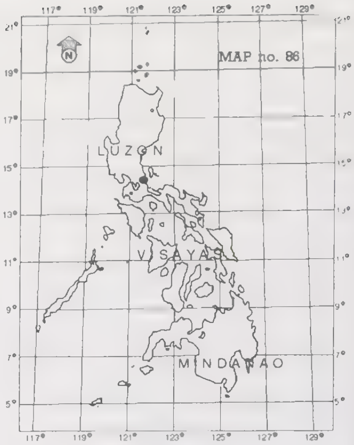
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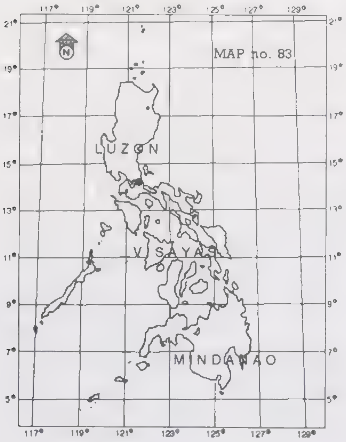
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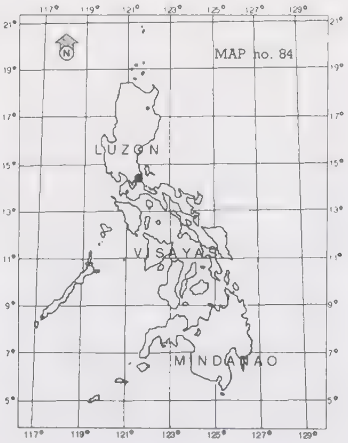
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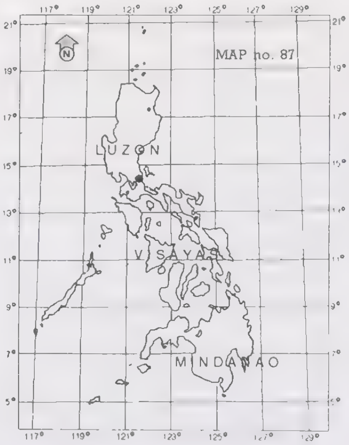
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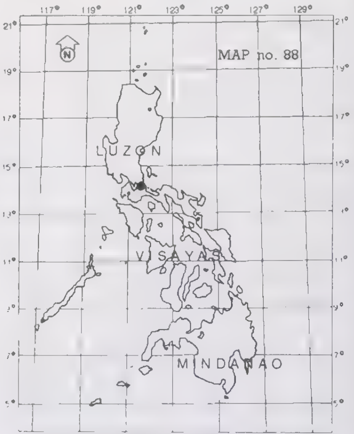
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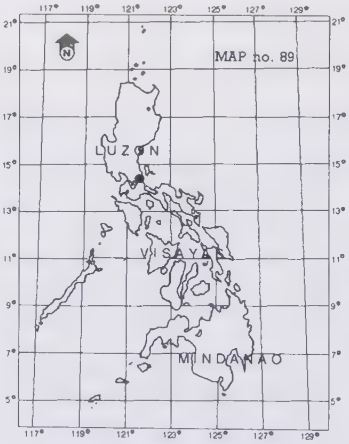
VISAYAS
MINDANAO

Maps 81–84. Distribution of *Cheiracanthium hugiscium* n. sp. (81); *Cheiracanthium catindigae* n. sp. (82); *Alaeho linoi* n. gen. and sp. (83); and *Castianeira tiranglupa* n. sp. (84).

Maps 85–88. Distribution of *Agroeca kltina* n. sp. (85); *Phrurolithus ulopatulisus* n. sp. (86); *Scotinella tinikitkita* n. sp. (87); and *Micaria siniloana* n. sp. (88).

Maps 89–92. Distribution of *Zelotes capiliae* n. sp. (89); *Zelotes cavaleriei* Schenkel (90); *Poecilochroa dayamibrookiana* n. sp. (91); and *Poecilochroa otonensis* n. sp. (92).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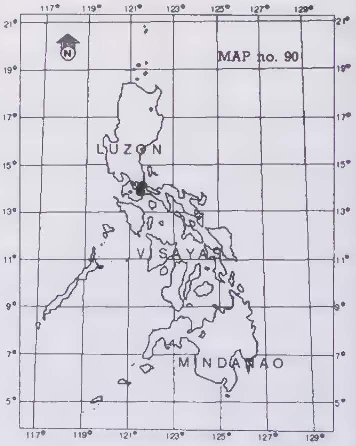
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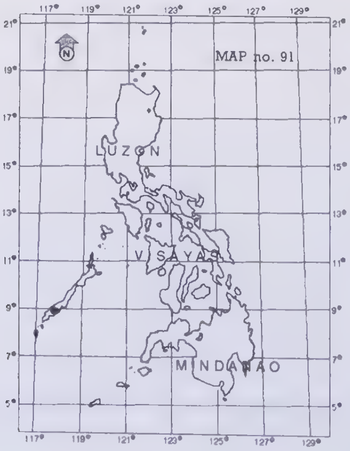
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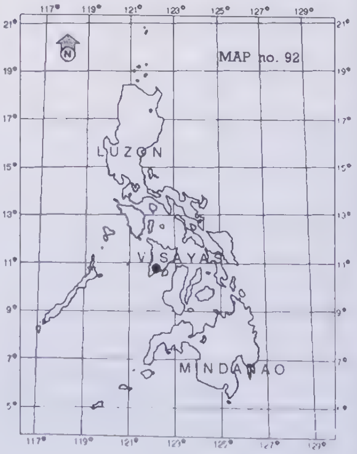
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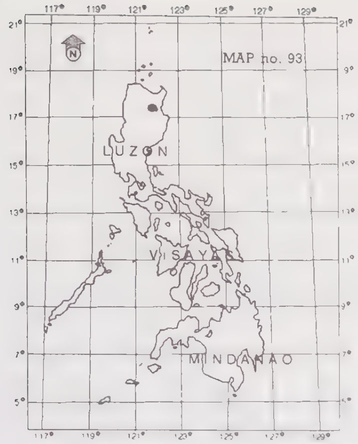
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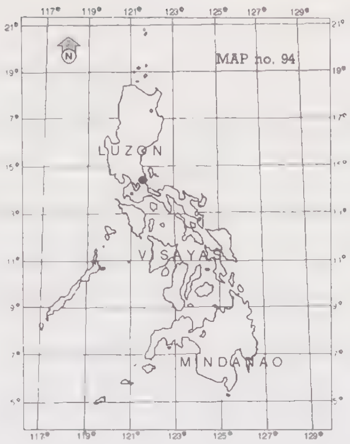
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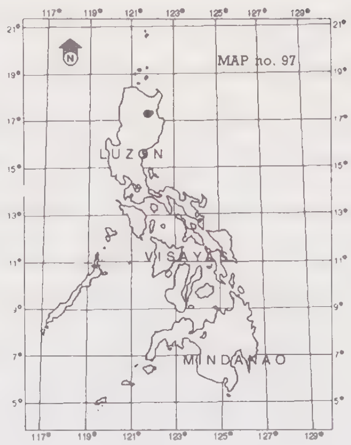
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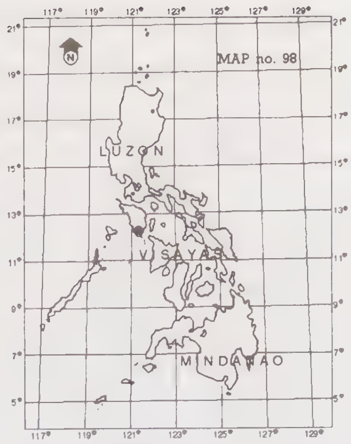
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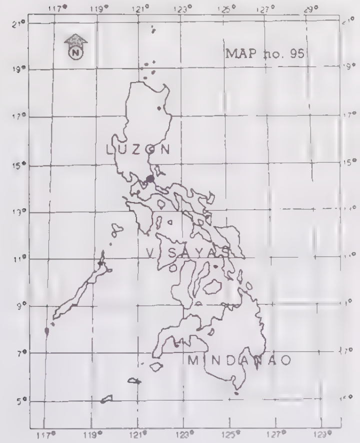
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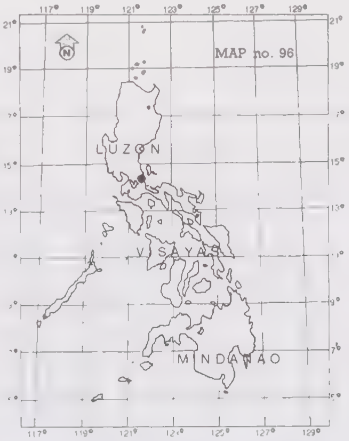
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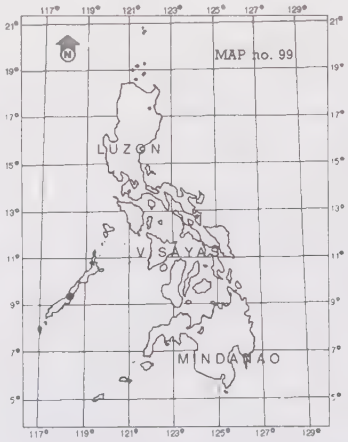
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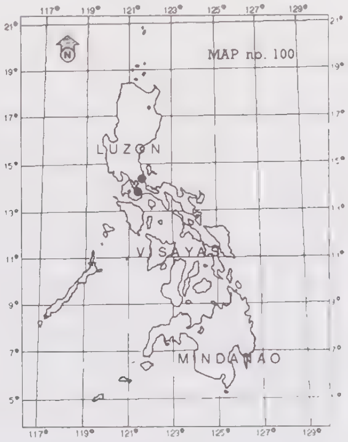
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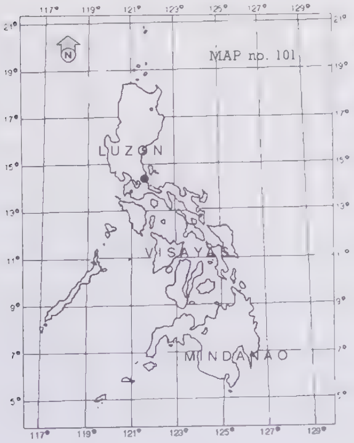
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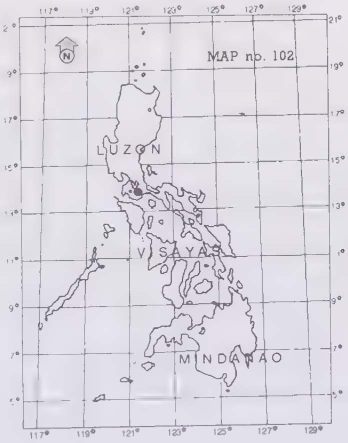
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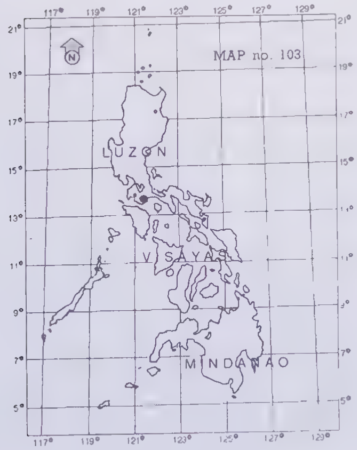
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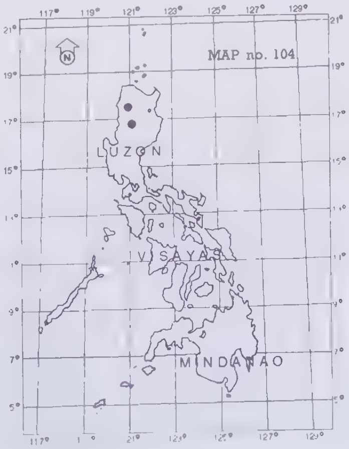
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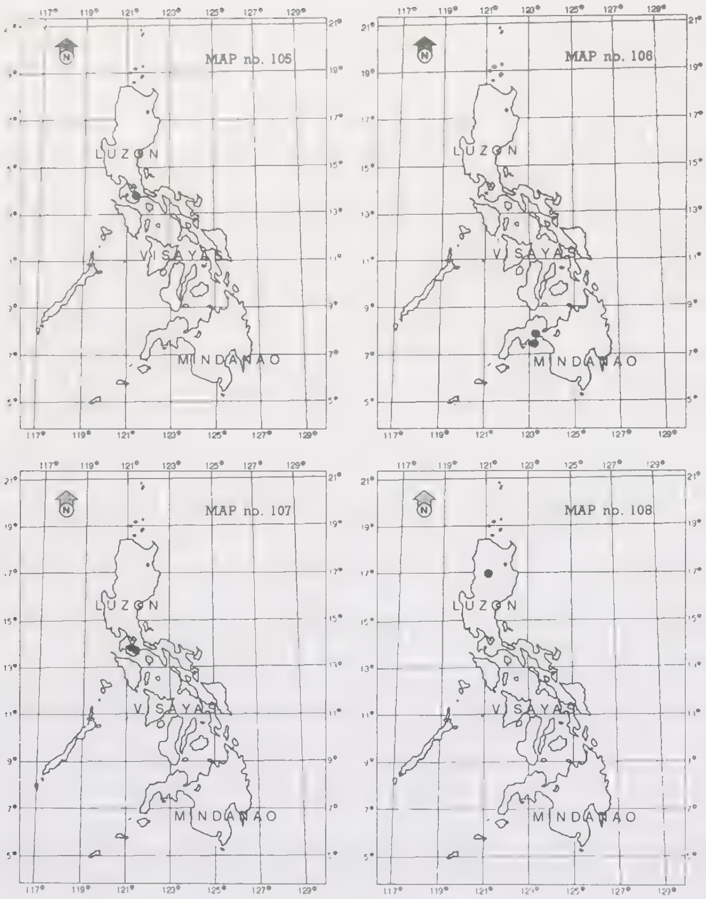
Maps 93–96. Distribution of *Poecilochroa alcala* n. sp. (93); *Poecilochroa parangunifascigera* n. sp. (94); *Geodrassus ellenae* n. sp. (95); and *Scotophaeus leoi* n. sp. (96).

Maps 97–100. Distribution of *Scotophaeus cecileae* n. sp. (97); *Borboropactus mindoroensis* n. sp. (98); *Borboropactus umaasaeus* n. sp. (99); and *Borboropactus bangkongeus* n. sp. (100).

Maps 101–104. Distribution of *Cupa kalawitana* n. sp. (101); *Tharrhalea mariae* n. sp. (102); *Stiphropus sangayus* n. sp. (103); and *Loxobates kawilus* n. sp. (104).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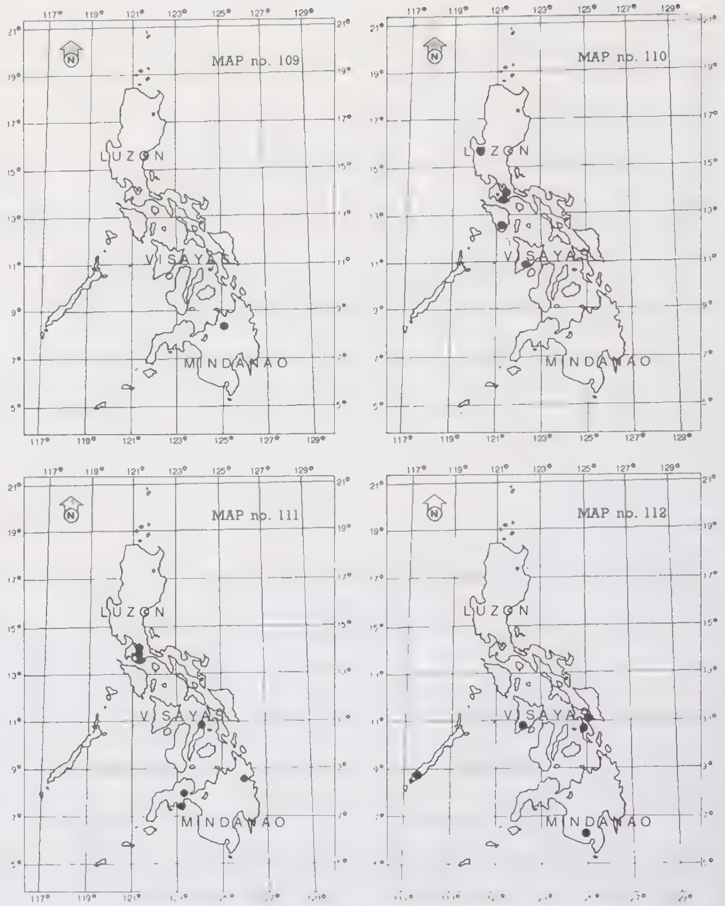
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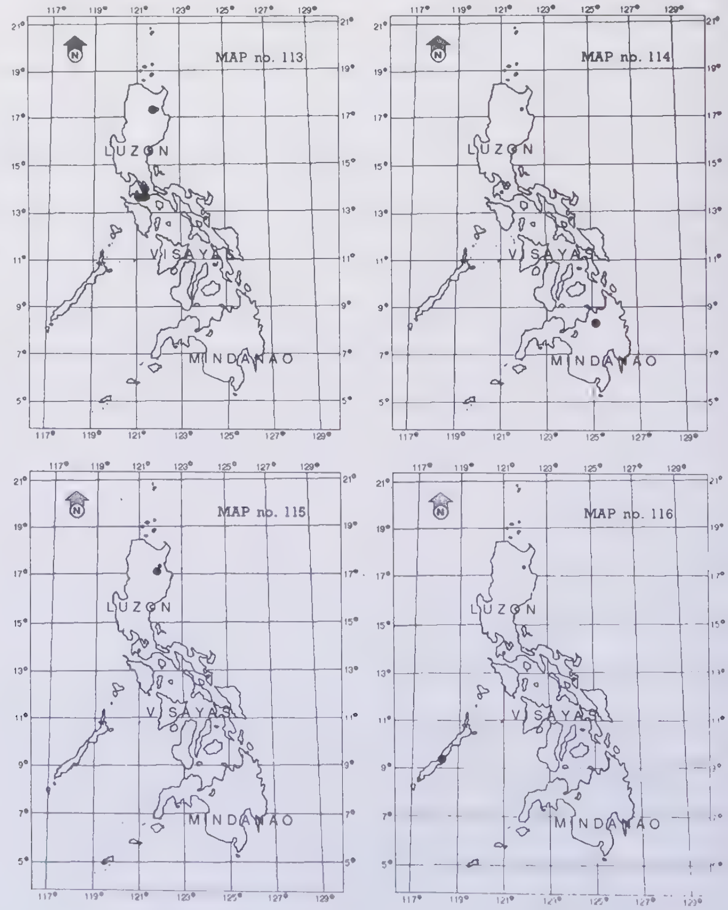
Maps 105–108. Distribution of *Loxobates masapangensis* n. sp. (105); *Tmarus dostinikus* n. sp. (106); *Monaeses habamatinikus* n. sp. (107); and *Monaeses aciculus* (Simon) (108).

Maps 109–112. Distribution of *Runcinia sangasanga* n. sp. (109); *Runcinia albostriata* Boesenberg and Strand (110); *Runcinia acuminata* (Thorell) (111); and *Thomisus italongus* n. sp. (112).

Maps 113–116. Distribution of *Thomisus okinawensis* Strand (113); *Thomisus iswadus* n. sp. (114); *Thomisus ilocanus* n. sp. (115); and *Taypaliito iorebotco* n. gen. and sp. (116).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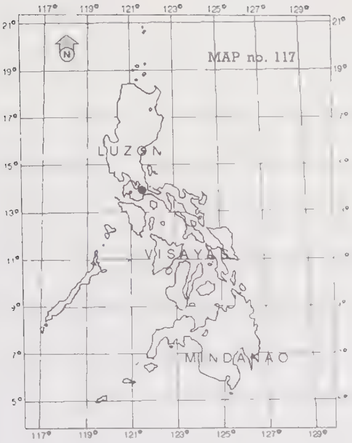
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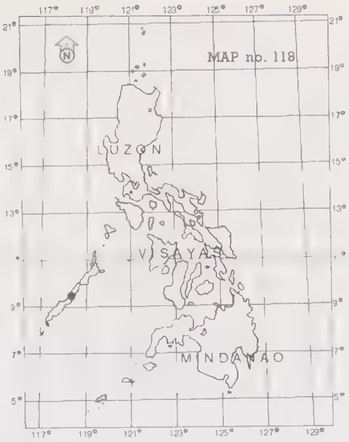
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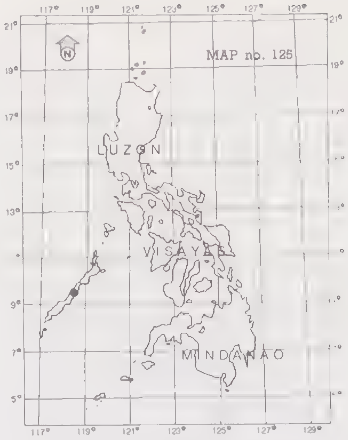
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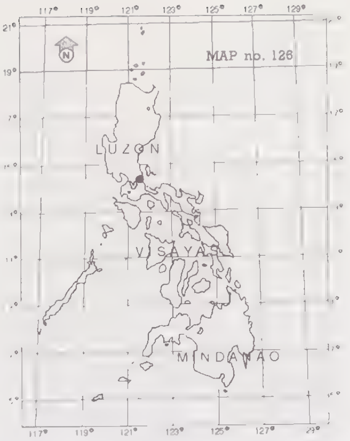
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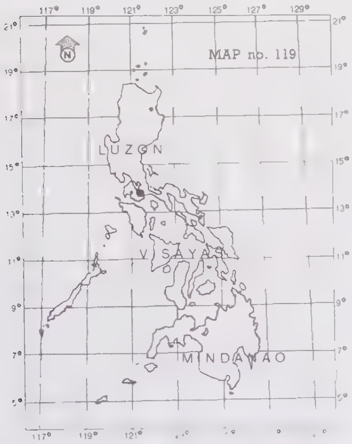
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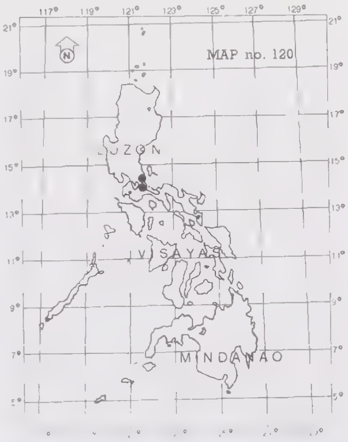
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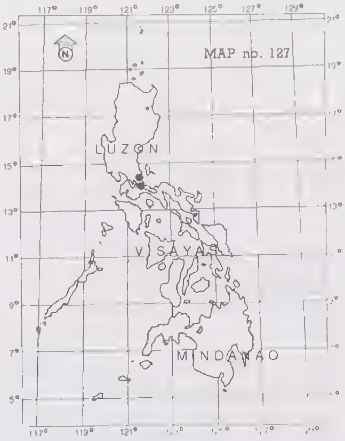
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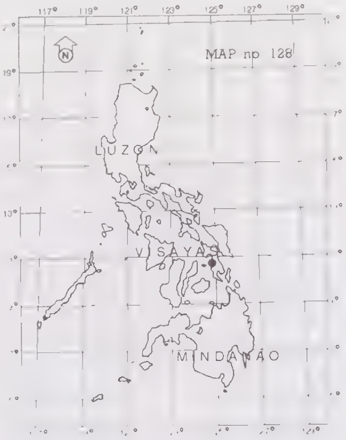
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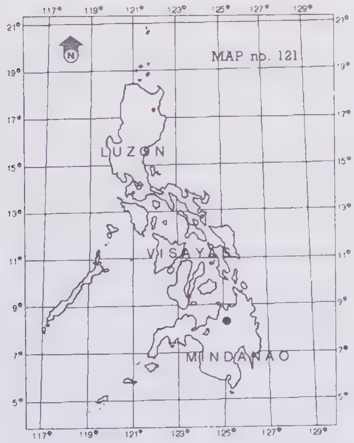
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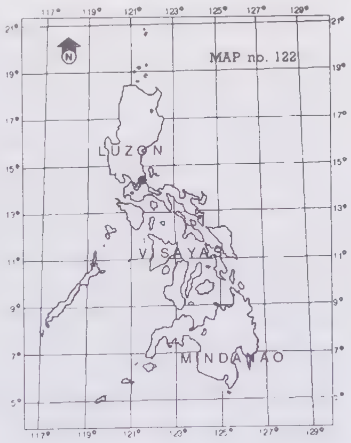
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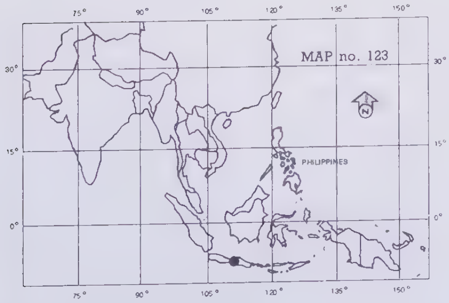
Maps 117–120. Distribution of *Camaricus florae* n. sp. (117); *Camaricus formosus* Thorell (118); *Camaricus parisukatus* n. sp. (119); and *Misumenoides matinikus* n. sp. (120).

Maps 121–124. Distribution of *Misumenoides pabilogus* n. sp. (121); *Misumena maputiyana* n. sp. (122); *Misumena tapyasuka* n. sp. (123); and *Misumena menoka* Tikader (124).

Maps 125–128. Distribution of *Xysticus palawanicus* n. sp. (125); *Diaea carangali* n. sp. (126); *Diaea tadtadtinika* n. sp. (127); and *Synaema globosum* (Fabricius) (128).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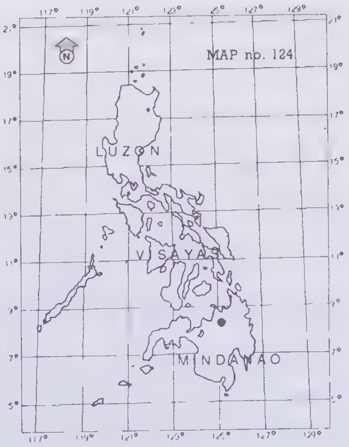
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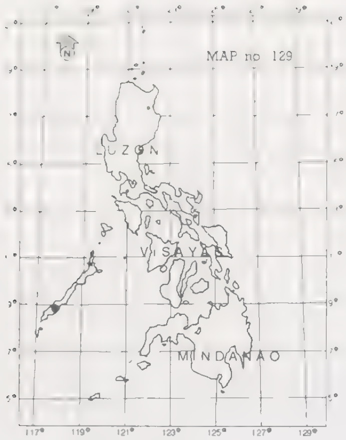
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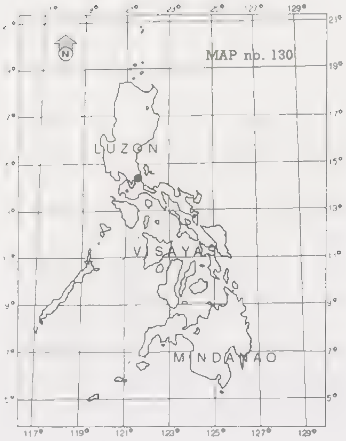
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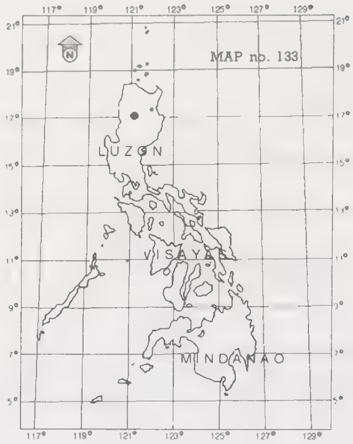
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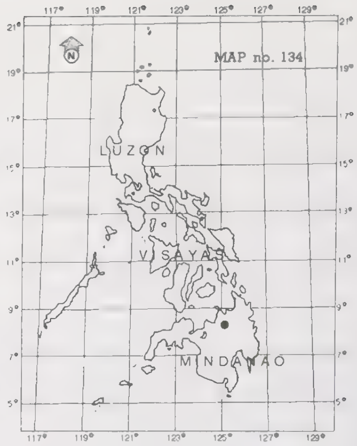
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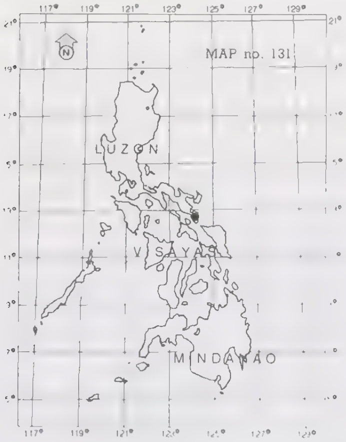
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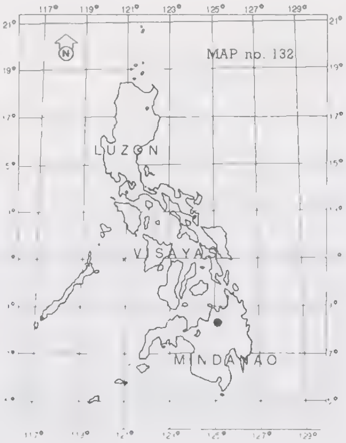
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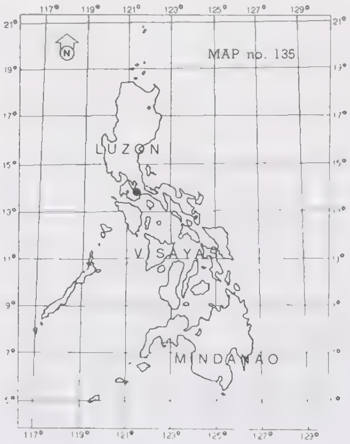
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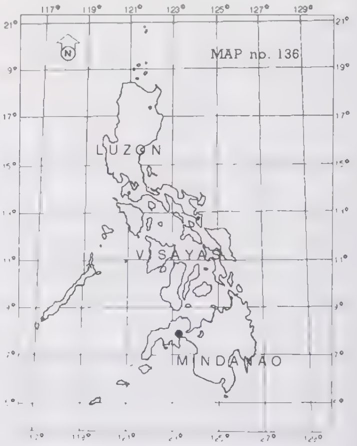
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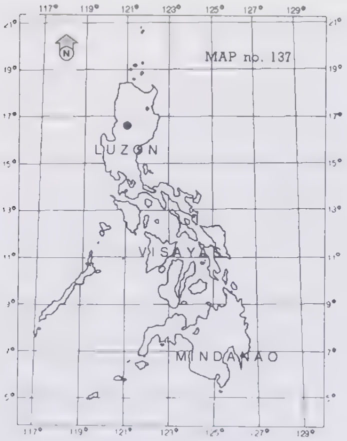
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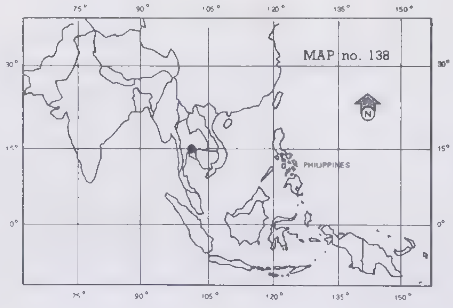
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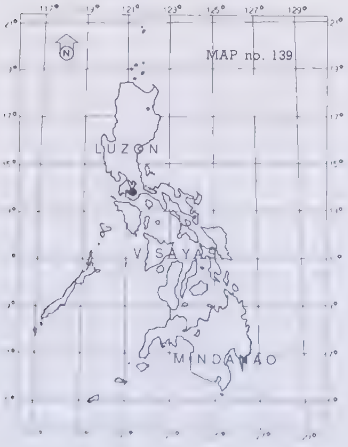
Maps 129–132. Distribution of *Synaema batarasa* n. sp. (129); *Lysiteles umalii* n. sp. (130); *Lysiteles sorsogonensis* n. sp. (131); and *Lysiteles suwertikos* n. sp. (132).

Maps 133–136. Distribution of *Lysiteles boteus* n. sp. (133); *Lysiteles magkalapitus* n. sp. (134); *Misumenops morrisi* n. sp. (135); and *Misumenops maygitgitus* n. sp. (136).

Maps 137–140. Distribution of *Philodromus kianganensis* n. sp. (137); *Thanatus parangvulgaris* n. sp. (138); *Heteropoda cyperusiria* n. sp. (139); and *Heteropoda garciai* n. sp. (140).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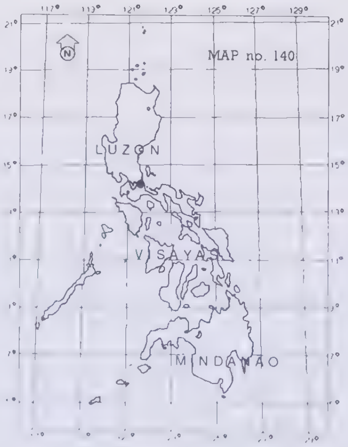
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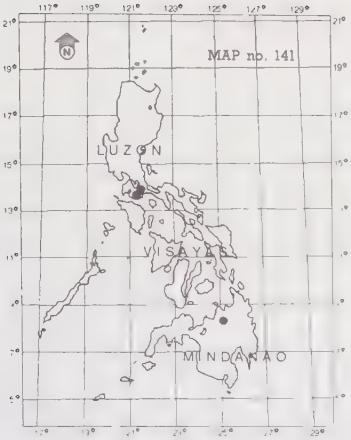
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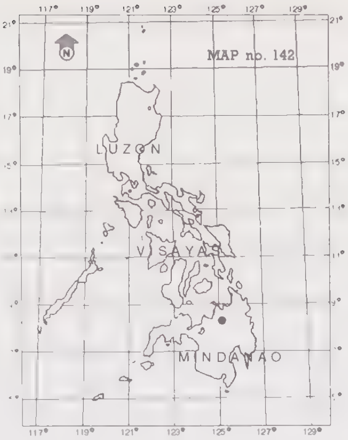
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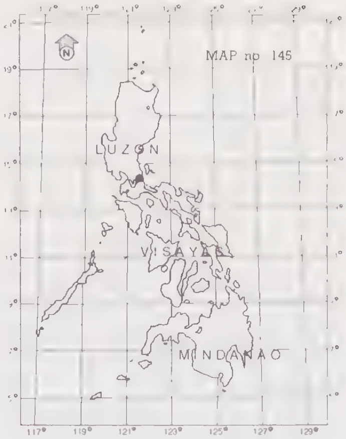
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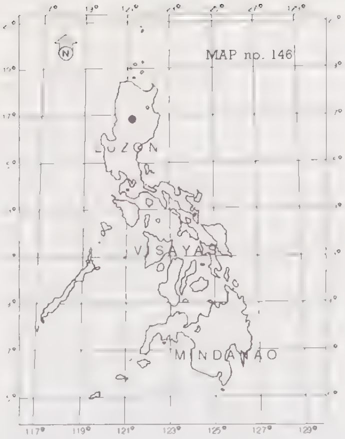
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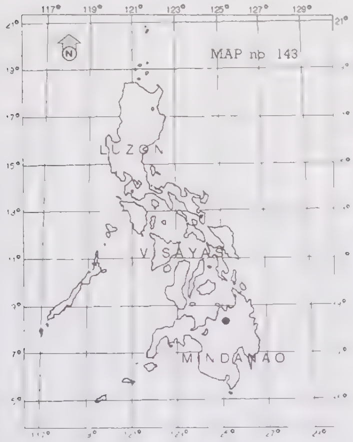
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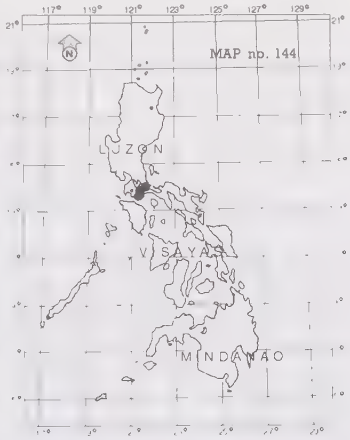
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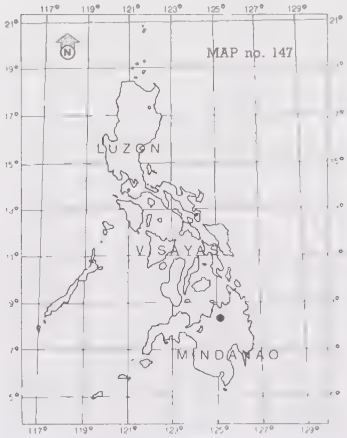
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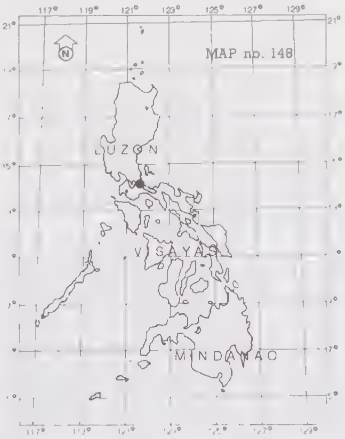
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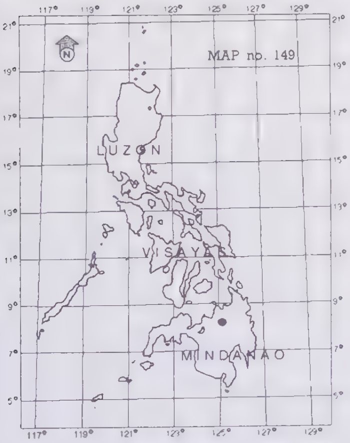
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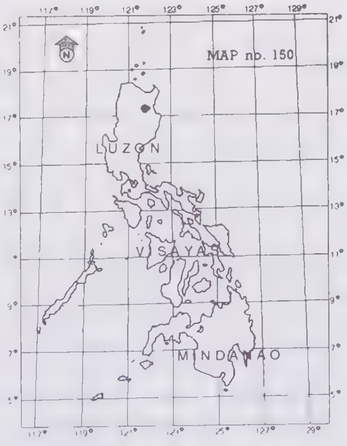
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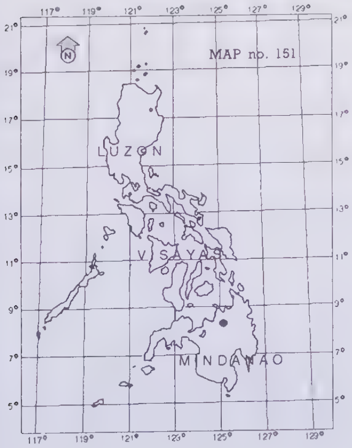
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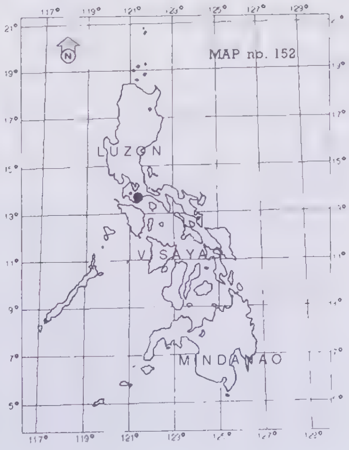
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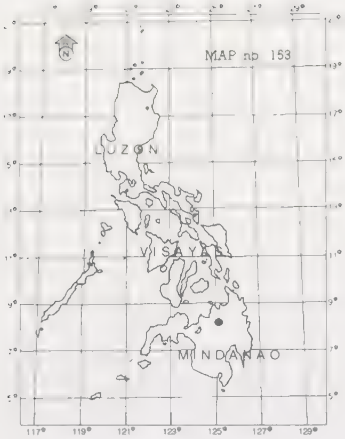
VISAYAS
MINDANAO

Maps 141–144. Distribution of *Heteropoda venatoria* (Linnaeus) (141); *Olios paalongus* n. sp. (142); *Olios mahabangkawitus* n. sp. (143); and *Olios perezi* n. sp. (144).

Maps 145–148. Distribution of *Thelcticopis huyoplata* n. sp. (145); *Thelcticopis kianganensis* n. sp. (146); *Thelcticopis simplerta* n. sp. (147); and *Thelcticopis kaparanganensis* n. sp. (148).

Maps 149–152. Distribution of *Isopeda sungaya* n. sp. (149); *Isopeda igraya* n. sp. (150); *Isopeda catmona* n. sp. (151); and *Isopeda pseudokumanga* n. sp. (152).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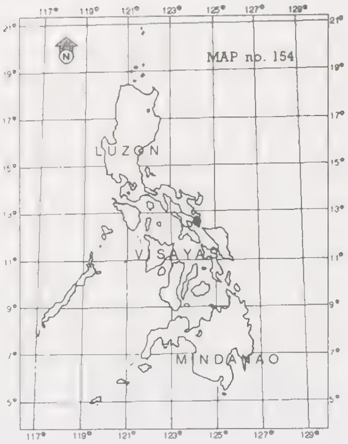
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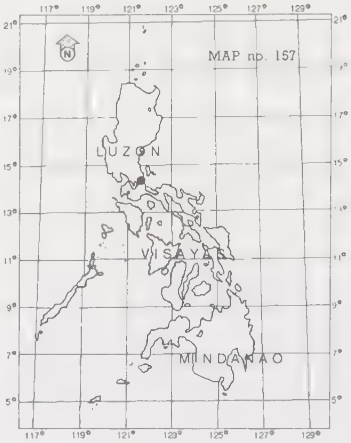
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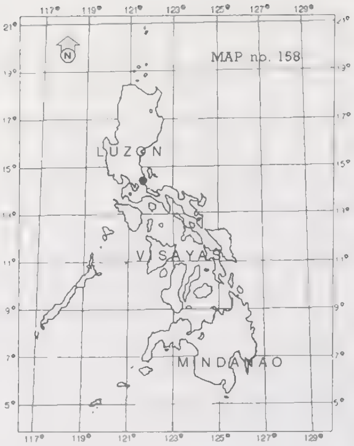
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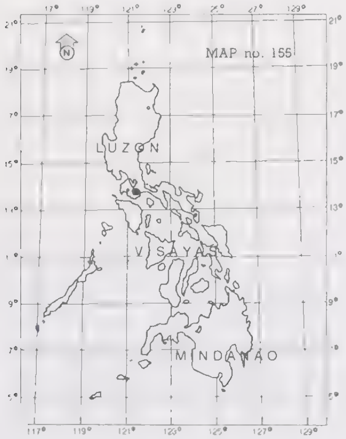
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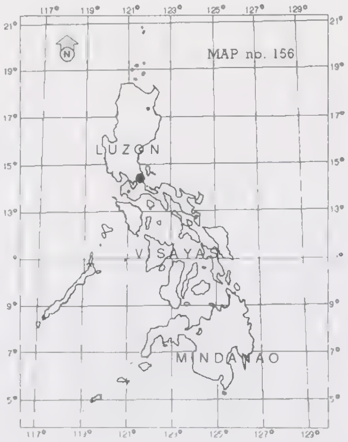
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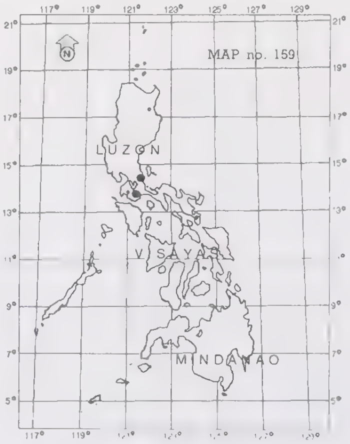
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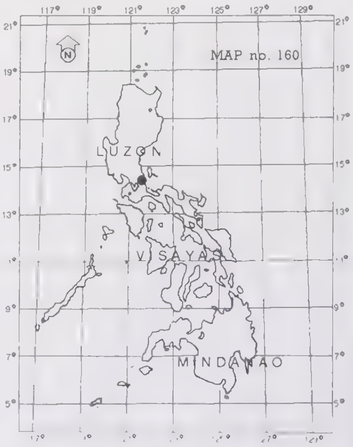
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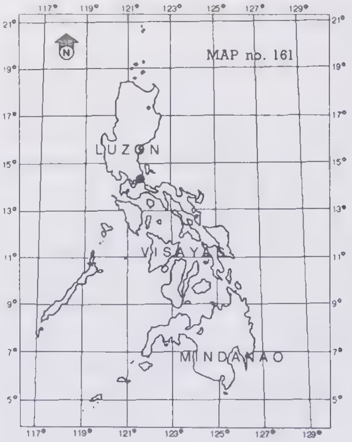
Maps 153–156. Distribution of *Isopeda tuhodnigra* n. sp. (153); *Isopeda bicolana* n. sp. (154); *Mimetus marjorieae* n. sp. (155); and *Ero salittana* n. sp. (156).
Maps 157–160. Distribution of *Ero luzonensis* n. sp. (157); *Asceua gruezoi* Barrion and Litsinger (158); *Langbiana panchoi* Barrion and Litsinger (159); and *Langbiana pricei* n. sp. (160).
Maps 161–164. Distribution of *Langbiana slaburuprica* n. sp. (161); *Langbiana calilungae* Barrion and Litsinger (162); *Peucetia myanmarensis* n. sp. (163); and *Oxyopes bikakaeus* n. sp. (164).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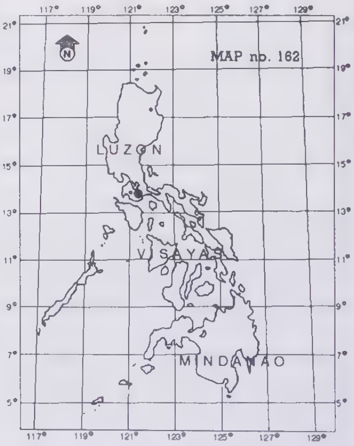
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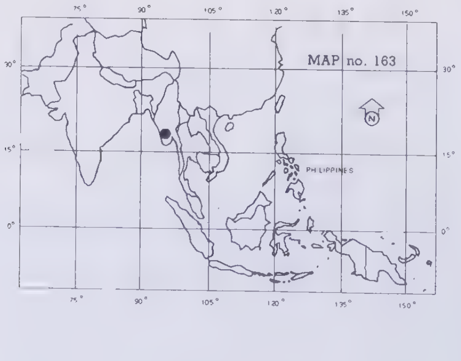
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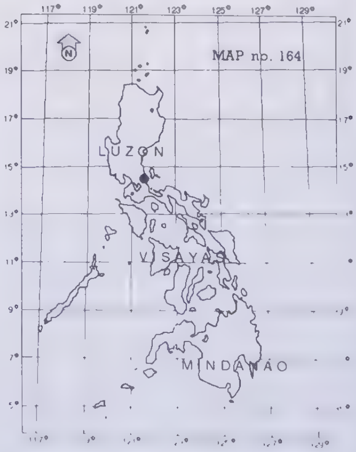
PHILIPPINES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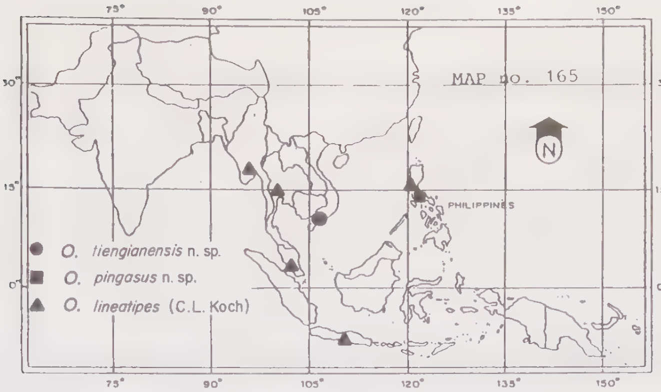
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75°
90°
105°
120°
135°
150°
30°
15°
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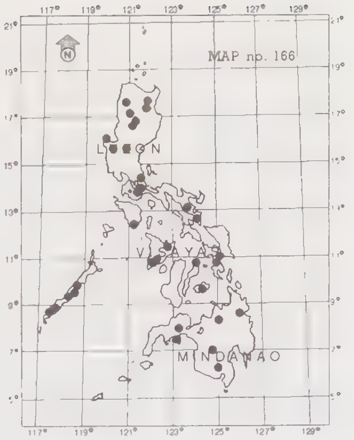
PHILIPPINES
N
● O. tiengianensis n. sp.
■ O. pingasus n. sp.
▲ O. lineatipes (C.L. Koch)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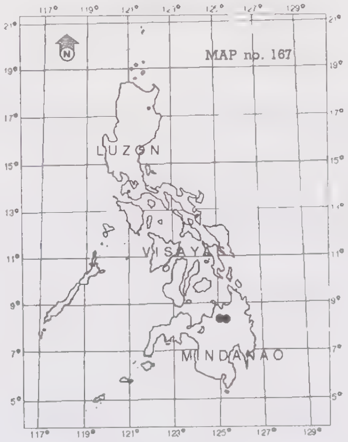
LUZON
VISAYAS
MINDANAO
117° 119° 121° 123° 125° 127° 129°
21° 19° 17° 15° 13° 11° 9° 7° 5°

Maps 165–168. Distribution of *Oxyopes tiengianensis* n. sp. (165●); *Oxyopes pingasus* n. sp. (165■); *Oxyopes lineatipes* (C. L. Koch) (165▲); *Oxyopes javanus* Thorell (166); *Oxyopes matiensis* n. sp. (167); and *Oxyopes aspirasi* n. sp. (168).

Maps 169–172. Distribution of *Oxyopes delmonteensis* n. sp. (169); *Hahnia tuybaana* n. sp. (170); *Neoantistea kaisaisa* n. sp. (171); and *Pisaura putiana* n. sp. (172).

Maps 173–176. Distribution of *Pisaura parangbusta* n. sp. (173); *Perenethis kawangisa* n. sp. (174); *Perenethis unifasciata* (Doleschall) (175); and *Thalassius botrelli* n. sp. (176).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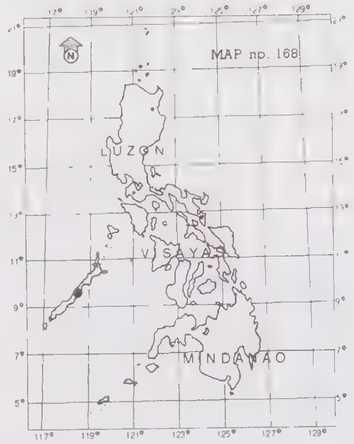
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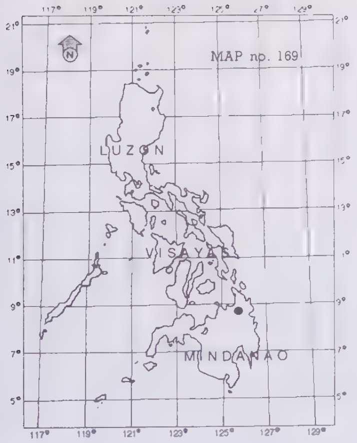
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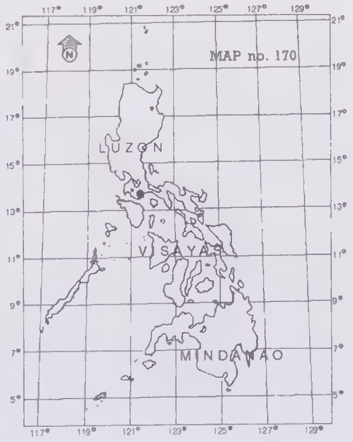
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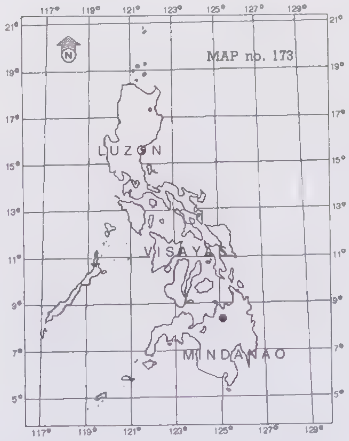
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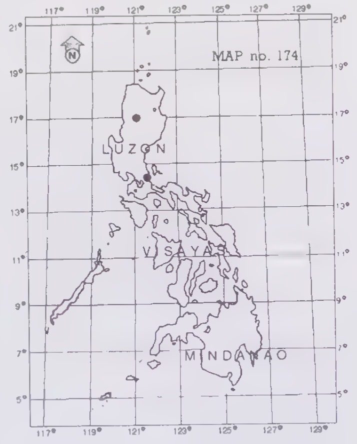
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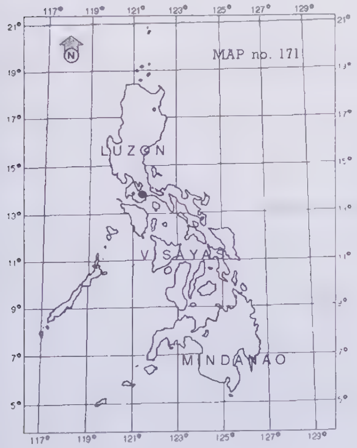
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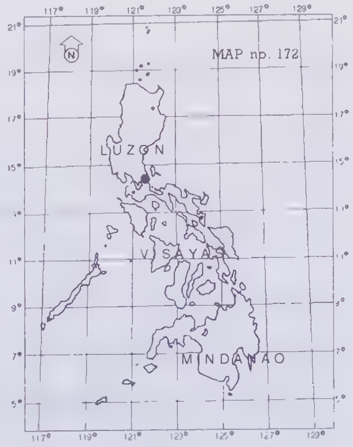
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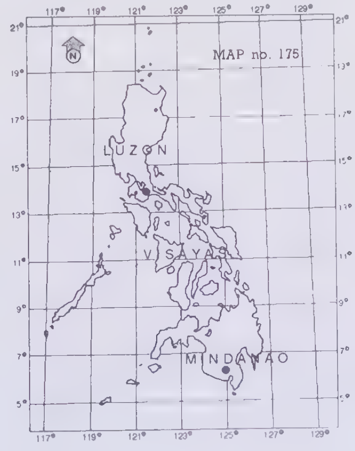
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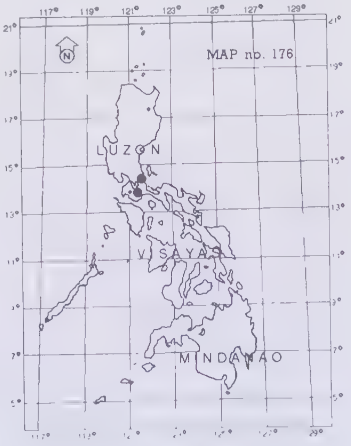
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VISAYAS
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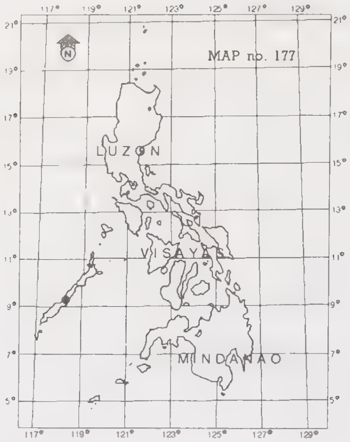
Maps 177–180. Distribution of *Thalassius balingkinitanus* n. sp. (177); *Thalassius albocinctus* (Doleschall) (178); *Venonia gabrielae* n. sp. (179); and *Hippasa partita* (Cambridge) (180).

Maps 181–184. Distribution of *Hippasa holmerae* Thorell (181); *Artoria luwamata* n. sp. (182); *Pirata luzonensis* n. sp. (183); *Pirata blabakensis* n. sp. (184●); and *Pardosa mackenziei* (Gravely) (184▲).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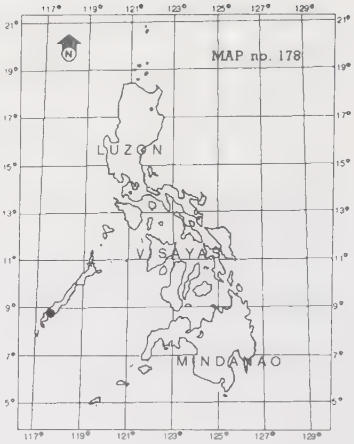
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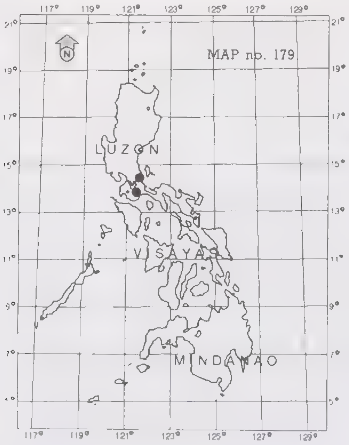
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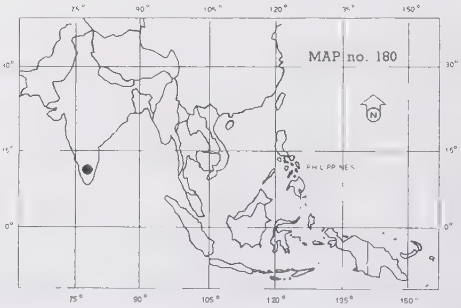
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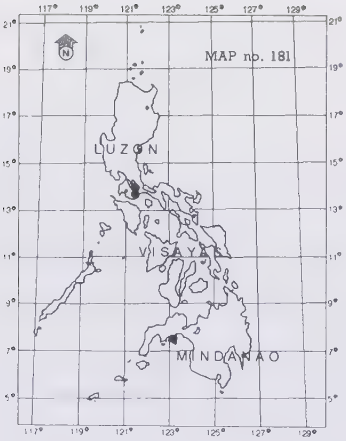
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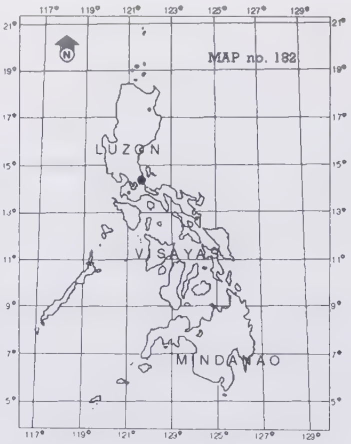
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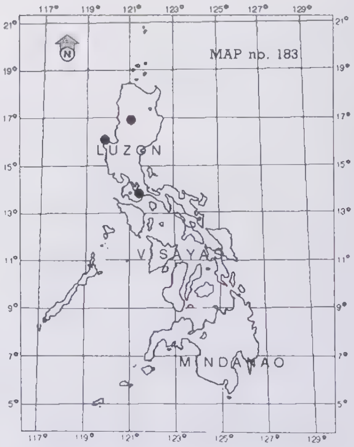
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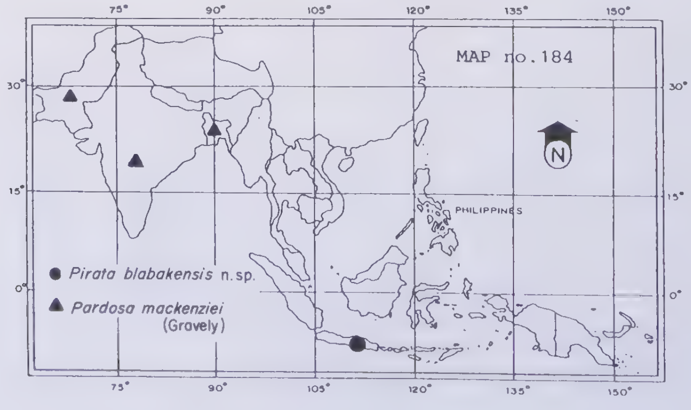
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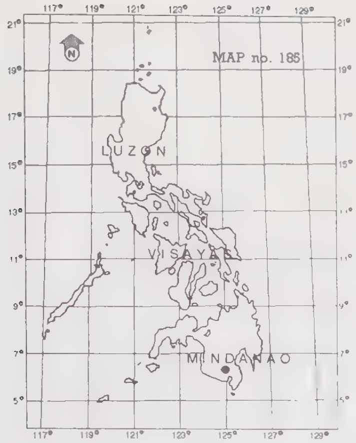
PHILIPPINES
● Pirata blabakensis n.sp.
▲ Pardosa mackenziei (Gravely)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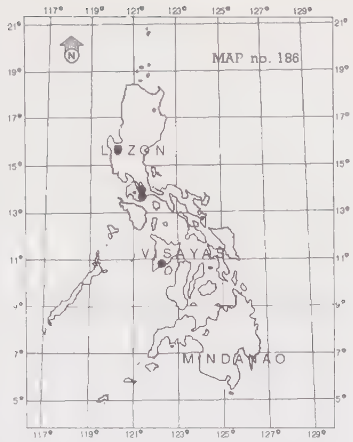
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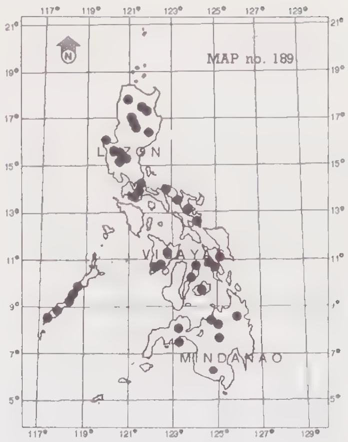
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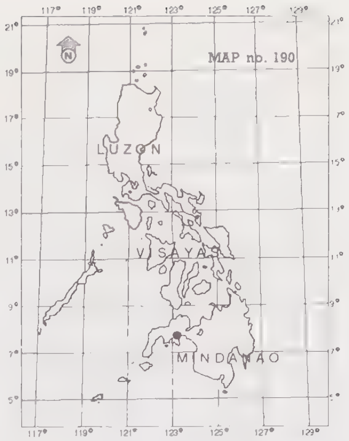
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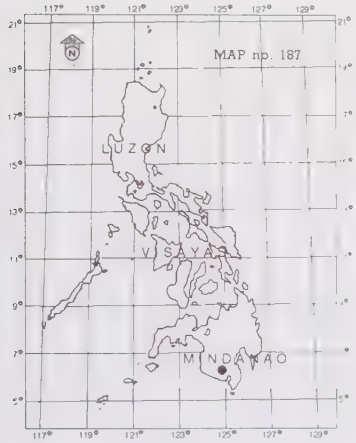
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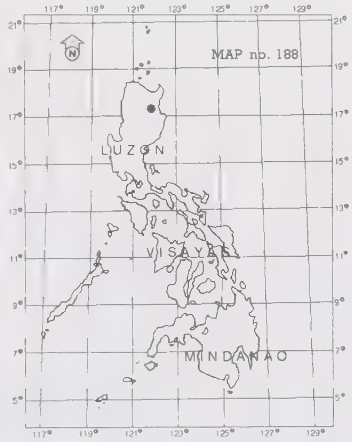
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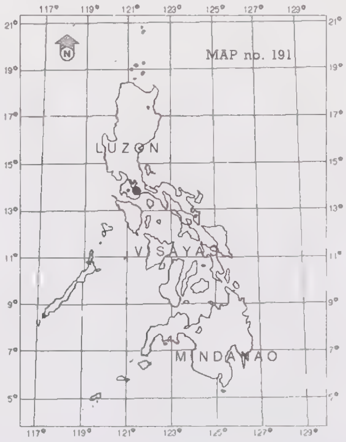
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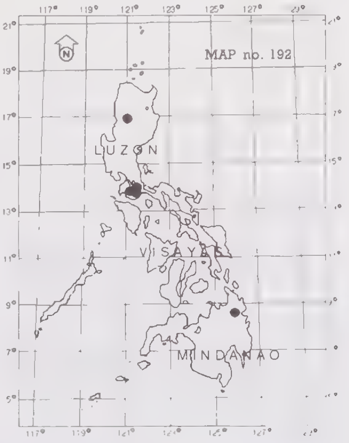
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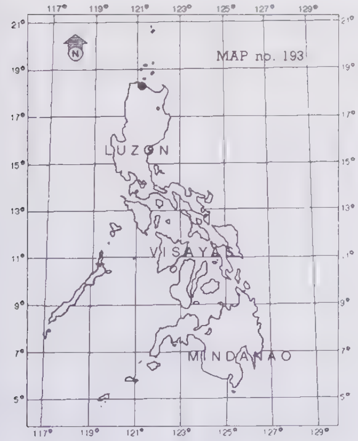
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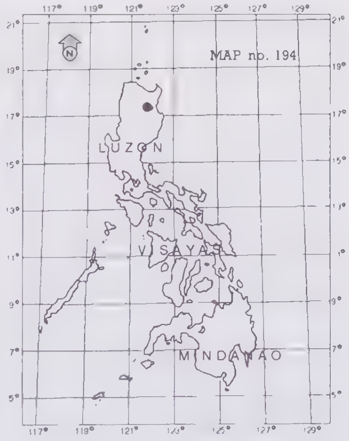
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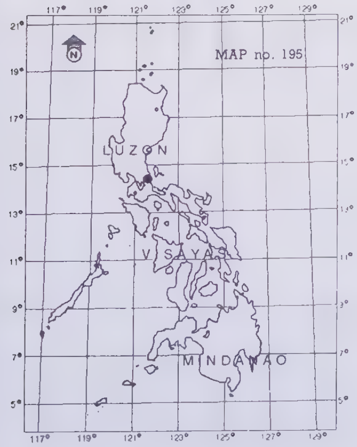
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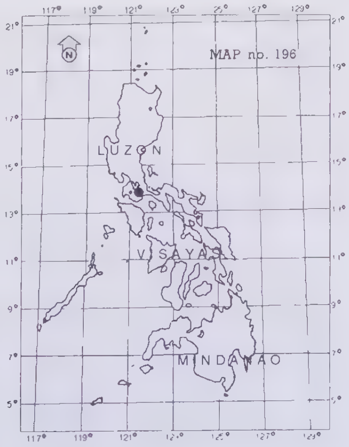
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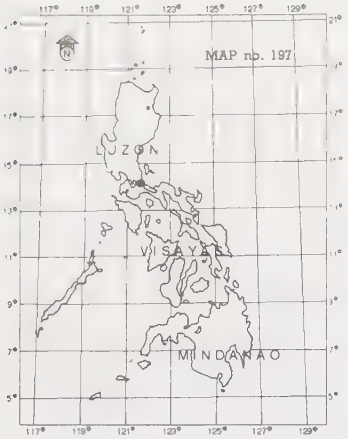
Maps 185–188. Distribution of *Schizocosa cotabatoana* n. sp. (185); *Arctosa tanakai* n. sp. (186); *Trochosa alviolai* n. sp. (187); and *Trochosa canapii* n. sp. (188).

Maps 189–192. Distribution of *Pardosa pseudoannulata* (Boesenberg and Strand) (189); *Pardosa sumatrana* (Thorell) (190); *Pardosa irriensis* n. sp. (191); and *Pardosa birmanica* Simon (192).

Maps 193–196. Distribution of *Pardosa patapatensis* n. sp. (193); *Pardosa apostoli* n. sp. (194); *Pardosa magkasalubonga* n. sp. (195); and *Pardosa caliraya* n. sp. (196).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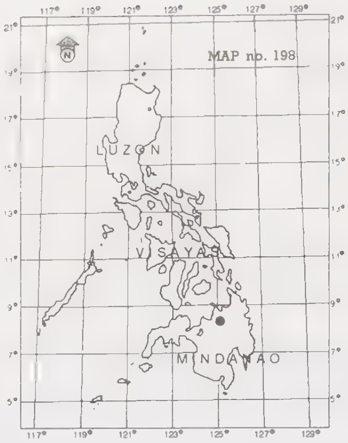
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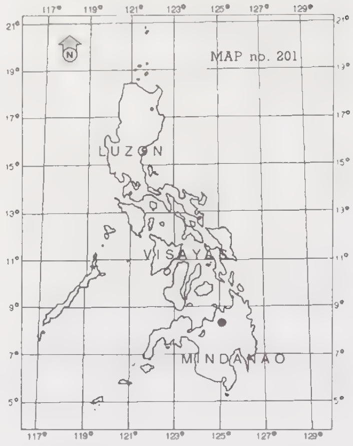
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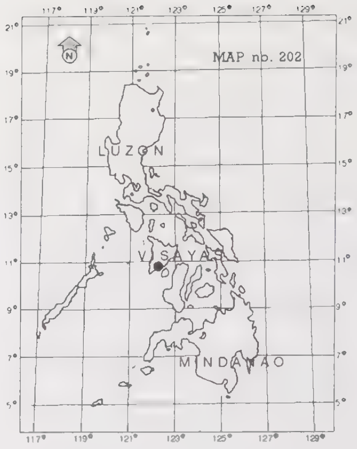
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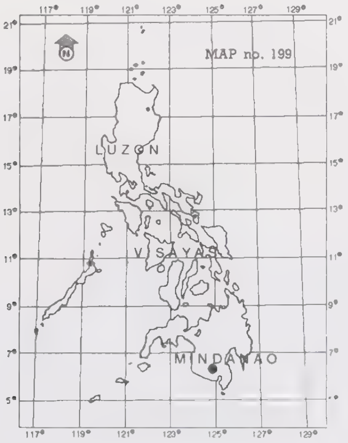
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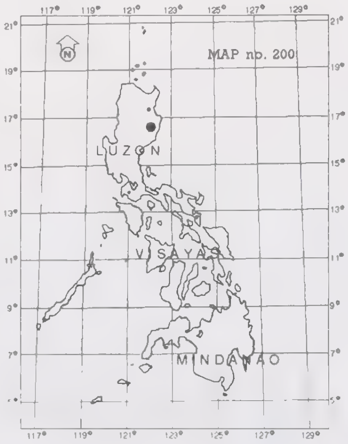
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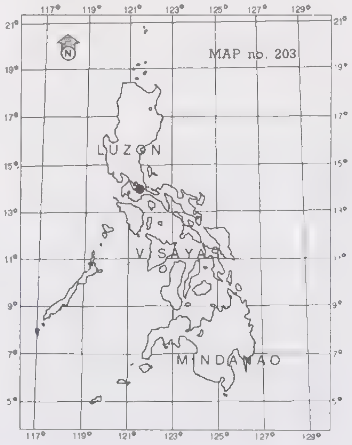
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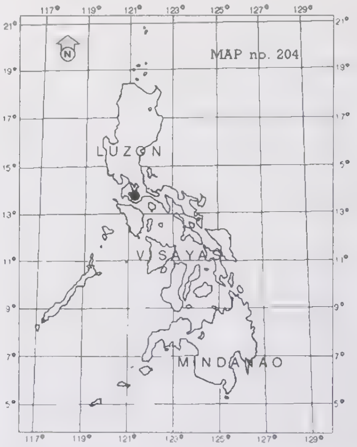
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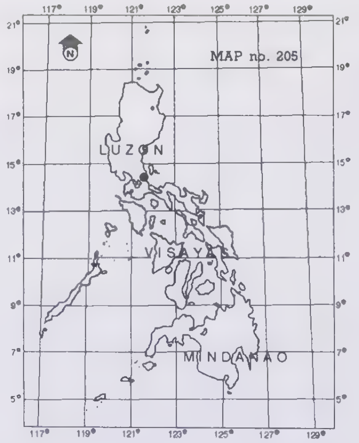
Maps 197–200. Distribution of *Pardosa daniloi* n. sp. (197); *Hogna rizali* n. sp. (198); *Hogna bonifacioi* n. sp. (199); and *Pardosa sacayi* n. sp. (200).

Maps 201–204. Distribution of *Pardosa hawakana* n. sp. (201); *Pardosa warayensis* n. sp. (202); *Pardosa santamaria* n. sp. (203); and *Pardosa mabinii* n. sp. (204).

Maps 205–208. Distribution of *Pardosa pahalanga* n. sp. (205); *Hersilia clathrata* Thorell (206); *Phoroncidia bukolana* n. sp. (207); and *Chrysso argyrodiformis* (Yaginuma) (208).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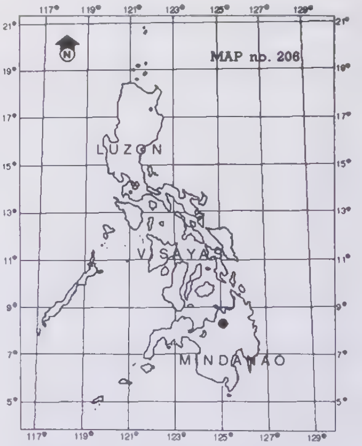
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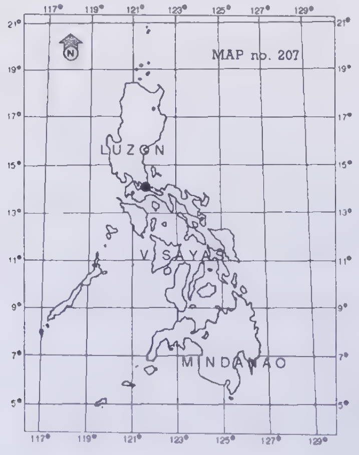
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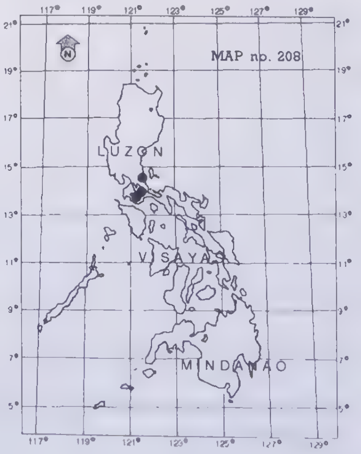
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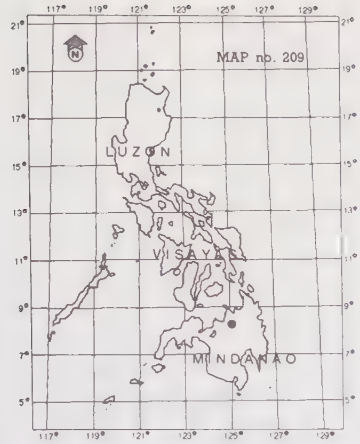
Maps 209–212. Distribution of *Chrysso anei* n. sp. (209); *Chrysso tiboli* n. sp. (210); *Chrysso isumbo* n. sp. (211); and *Coleosoma octomaculatum* (Boesenberg and Strand) (212).

Maps 213–216. Distribution of *Coleosoma blandum* Cambridge (213); *Coleosoma caliothripsum* n. sp. (214); *Coleosoma pseudoblandum* n. sp. (215); and *Coleosoma saispotum* n. sp. (216).

Maps 217–220. Distribution of *Coleosoma pabilogum* n. sp. (217); *Coleosoma matinikum* n. sp. (218); *Achaearanea brookesiana* n. sp. (219); and *Achaearyopa pnaca* n. sp. (220).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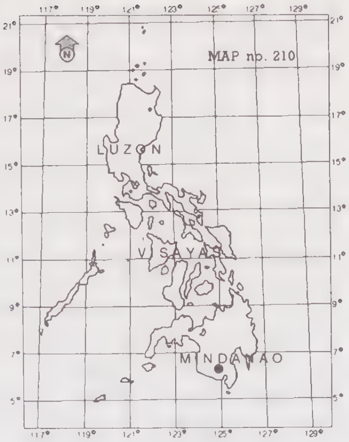
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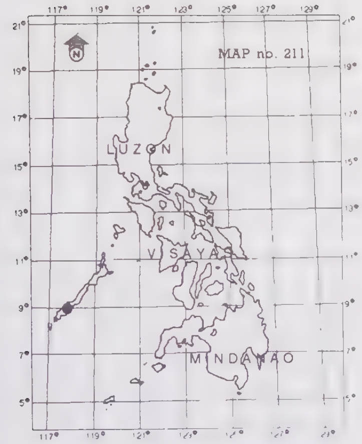
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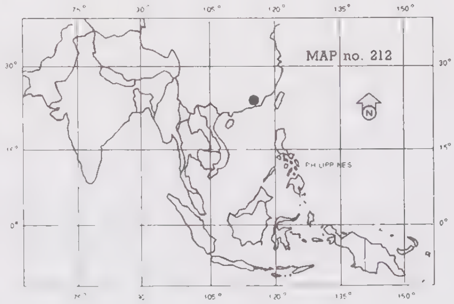
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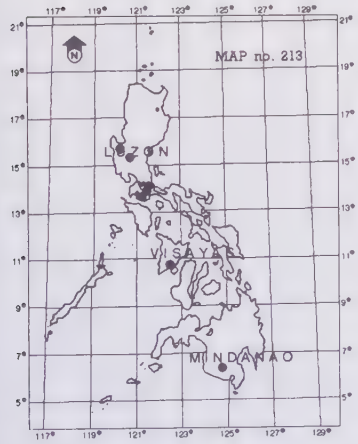
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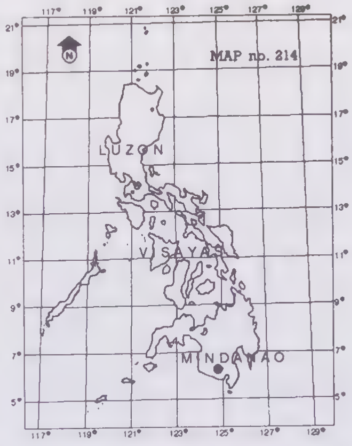
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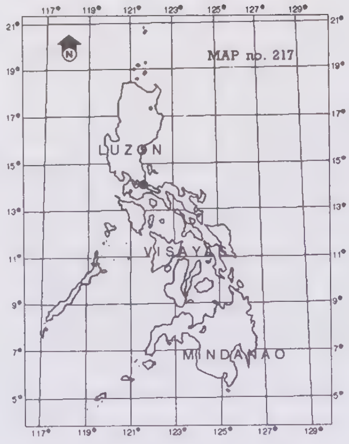
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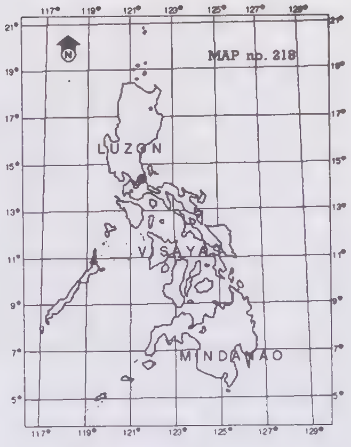
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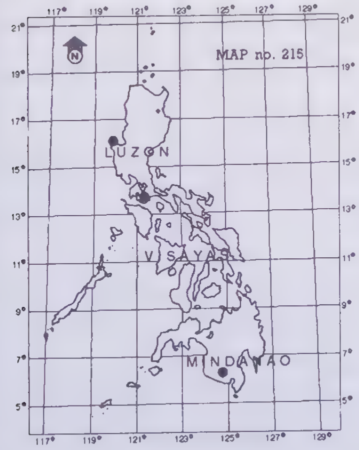
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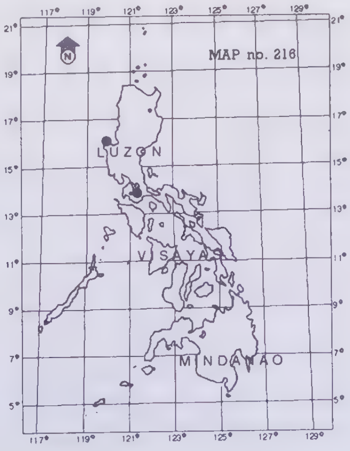
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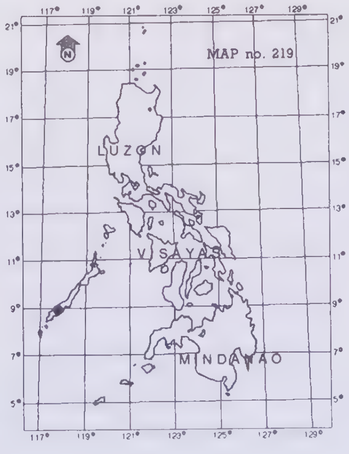
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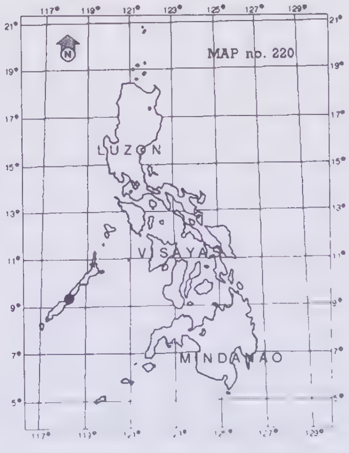
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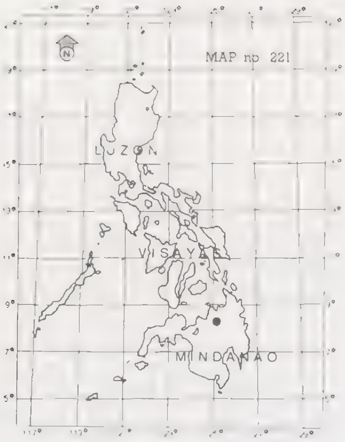
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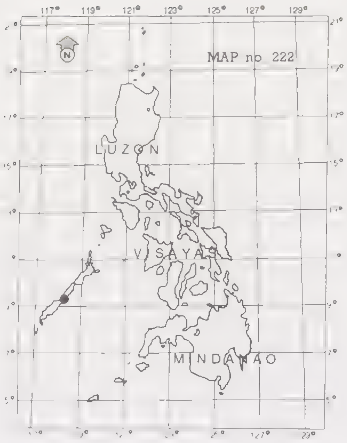
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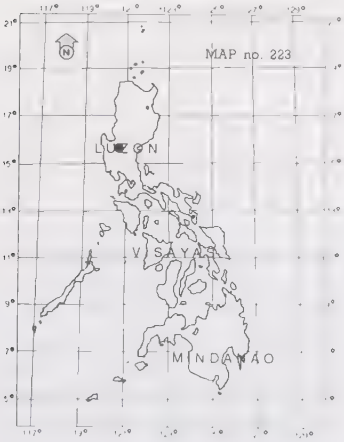
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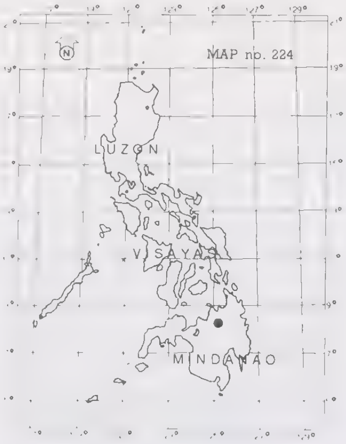
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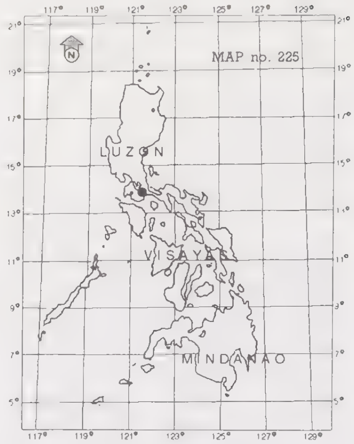
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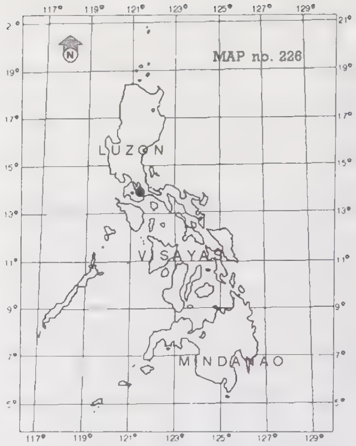
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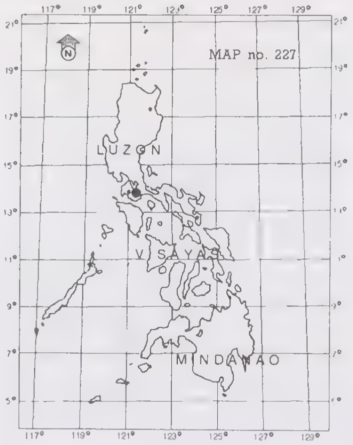
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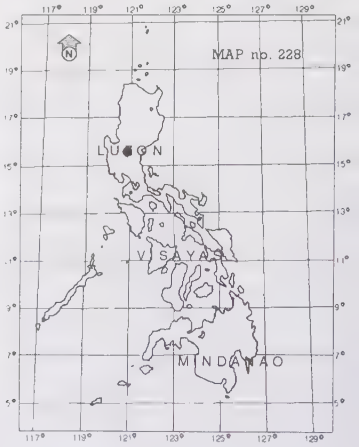
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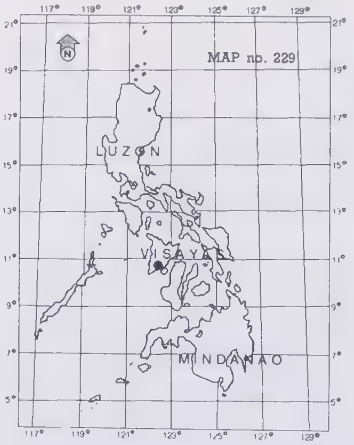
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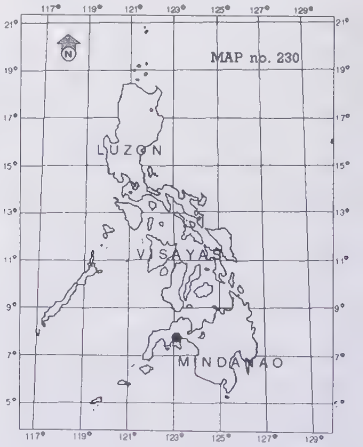
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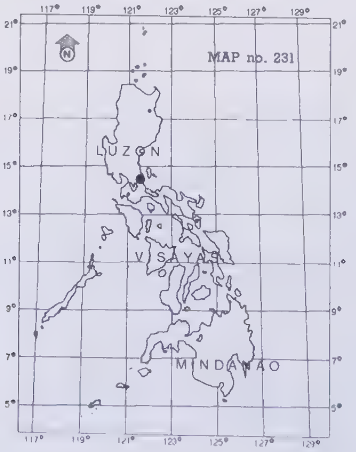
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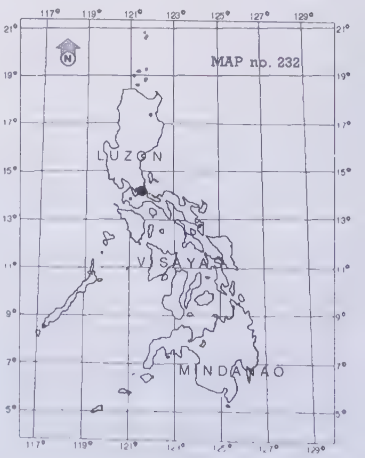
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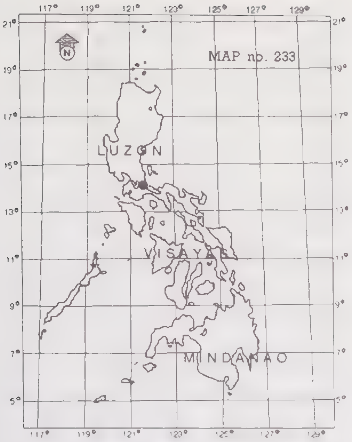
Maps 221–224. Distribution of *Landoppo misamisoriensis* n. sp. (221); *Theridion bitakum* n. sp. (222); *Theridion necijaensis* n. sp. (223); and *Theridion kambalum* n. sp. (224).
Maps 225–228. Distribution of *Theridion ischagosum* n. sp. (225); *Theridion antheae* n. sp. (226); *Theridion otsospotum* n. sp. (227); and *Theridion punongpalayum* n. sp. (228).
Maps 229–232. Distribution of *Theridion lumabani* n. sp. (229); *Anelosimus salaensis* n. sp. (230); *Anelosimus nigrobaricus* n. sp. (231); and *Dipoena ruedai* n. sp. (232).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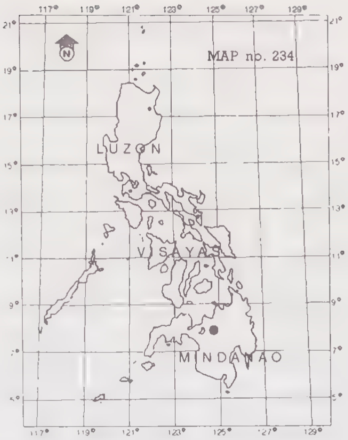
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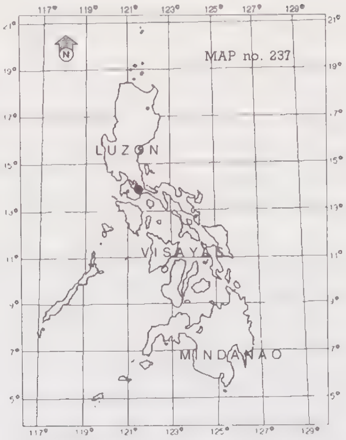
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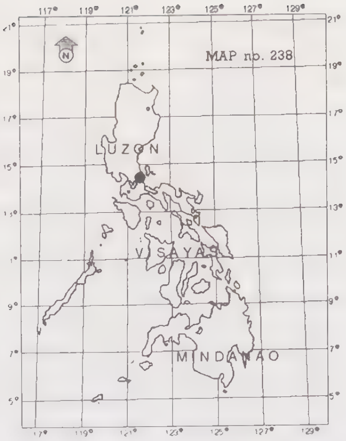
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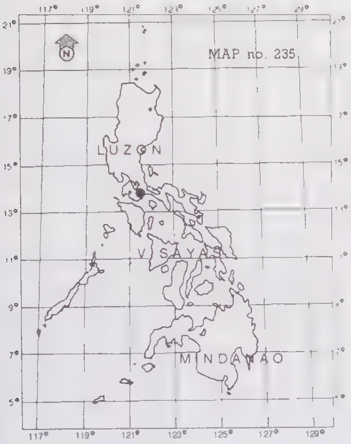
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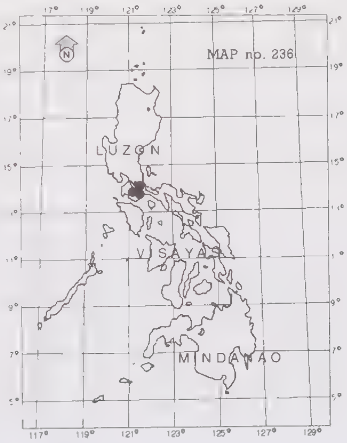
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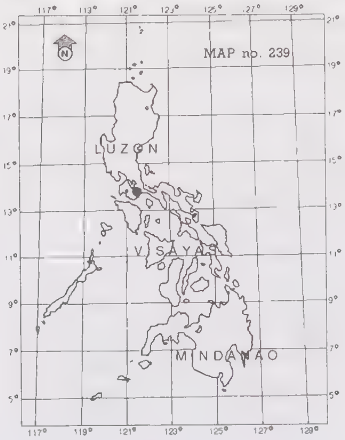
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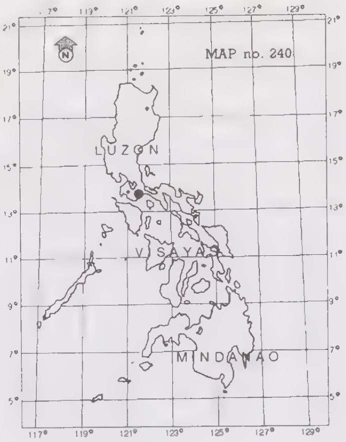
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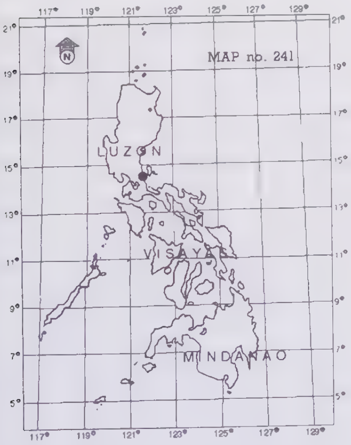
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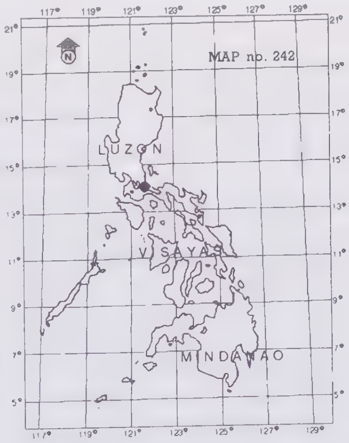
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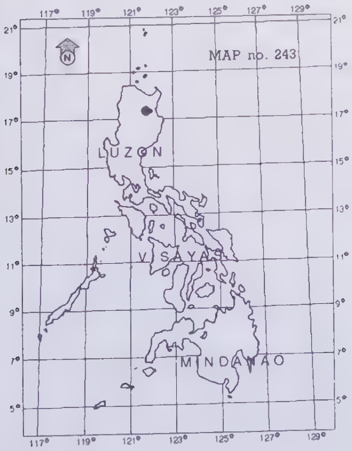
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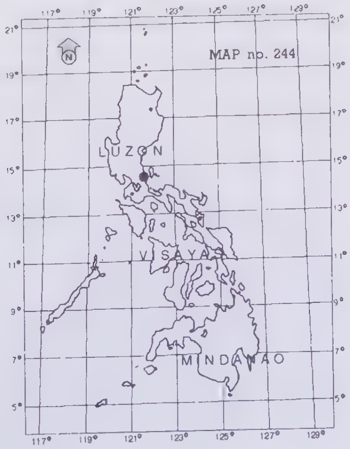
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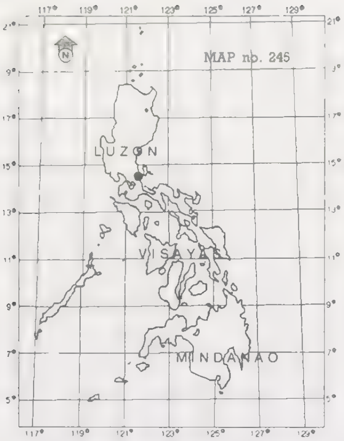
Maps 233–236. Distribution of *Dipoena tuldokguhitanea* n. sp. (233); *Latrodectus mactans* (Fabricius) (234); *Argyrodes saganus* (Doenitz and Strand) (235); and *Argyrodes bonadea* (Karsch) (236).
Maps 237–240. Distribution of *Steatoda ngipina* n. sp. (237); *Enoplognatha philippinensis* n. sp. (238); *Enoplognatha kalaykayina* n. sp. (239); and *Enoplognatha tuybaana* n. sp. (240).
Maps 241–244. Distribution of *Enoplognatha yelpantrapensis* n. sp. (241); *Enoplognatha cariasoi* n. sp. (242); *Enoplognatha malapahabanda* n. sp. (243); and *Enoplognatha pulatuberculata* n. sp. (244).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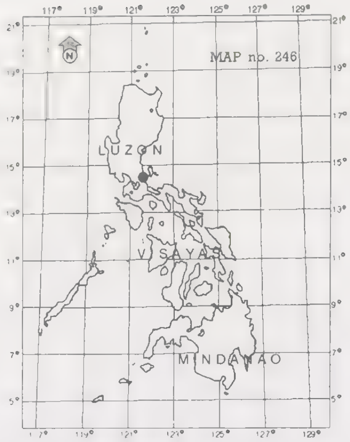
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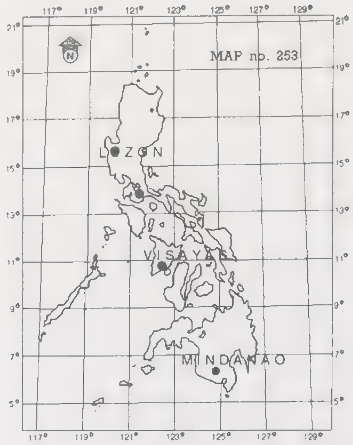
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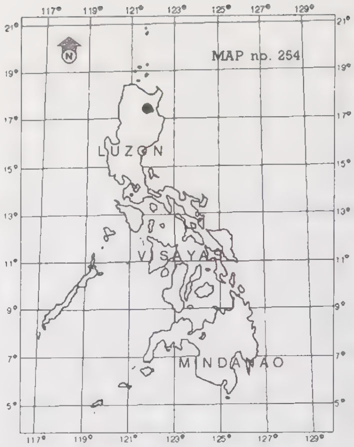
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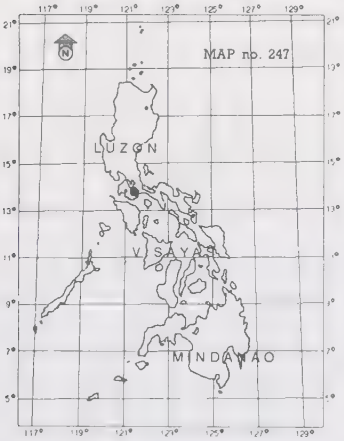
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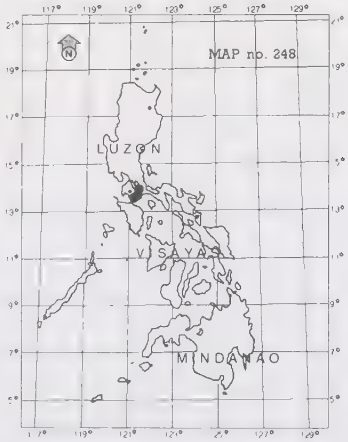
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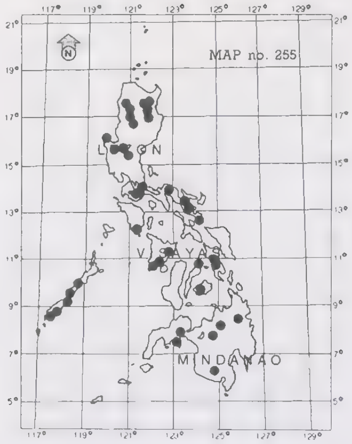
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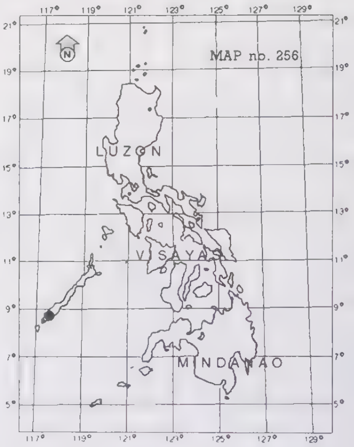
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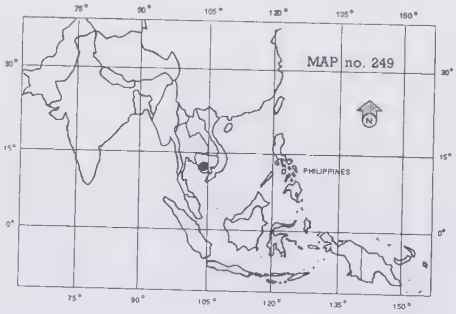
Maps 245–248. Distribution of *Enoplognatha maysanga* n. sp. (245); *Enoplognatha apaya* n. sp. (246); *Bathyphantes tagalogensis* n. sp. (247); and *Atypena adelinae* n. sp. (248).

Maps 249–252. Distribution of *Atypena thailandica* n. sp. (249); *Erigone malvari* n. sp. (250); *Erigone bifurca* Locket (251); and *Wendilgarda liliwensis* n. sp. (252).

Maps 253–256. Distribution of *Dyschiriognatha hawigtenera* n. sp. (253); *Pachygnatha ochongipina* n. sp. (254); *Tetragnatha javana* (Thorell) (255); and *Tetragnatha desaguni* n. sp. (256).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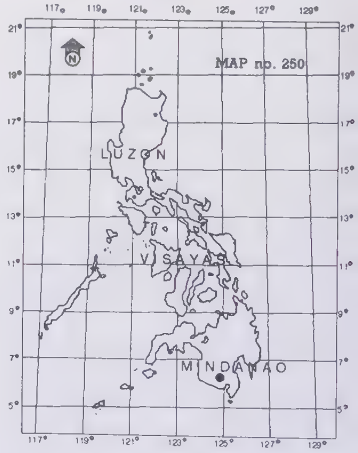
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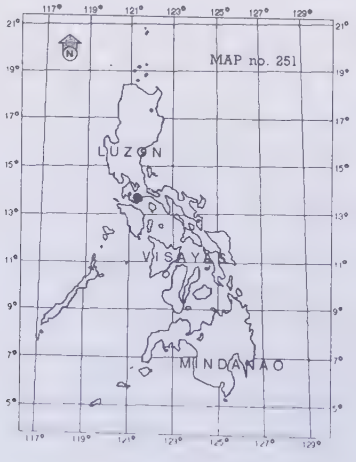
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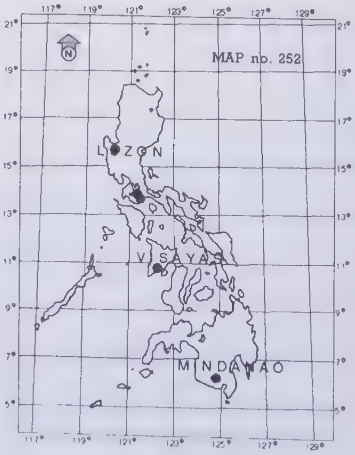
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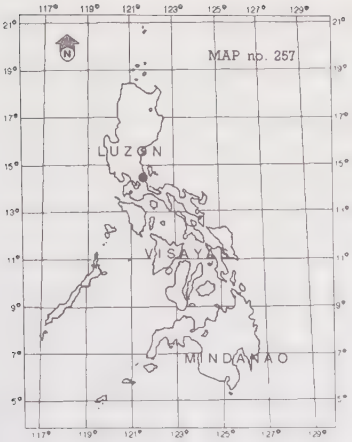
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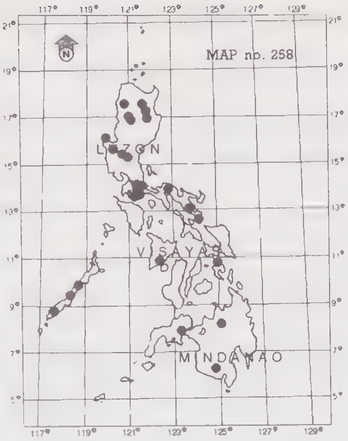
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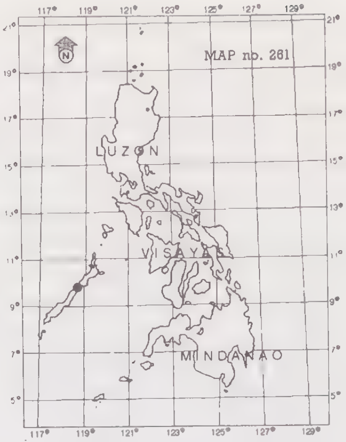
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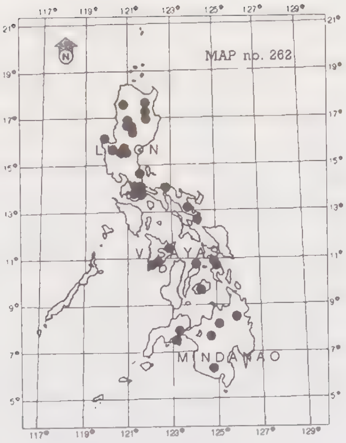
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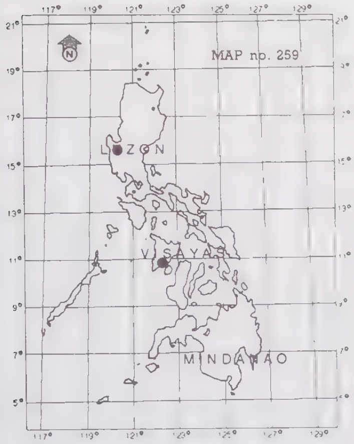
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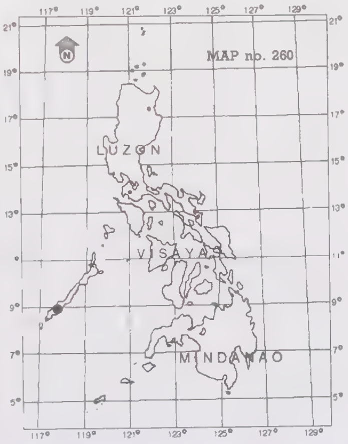
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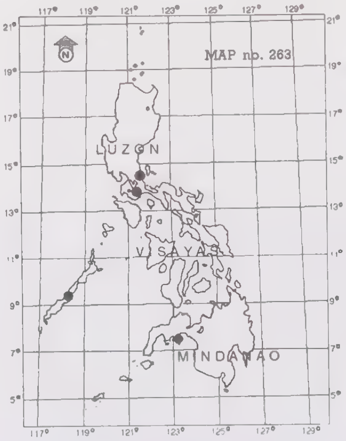
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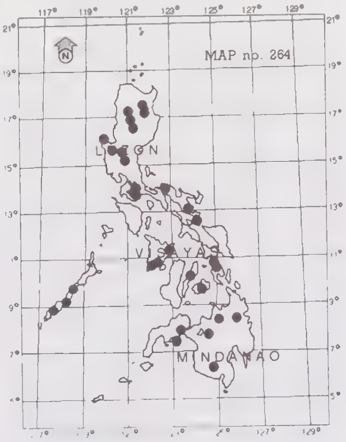
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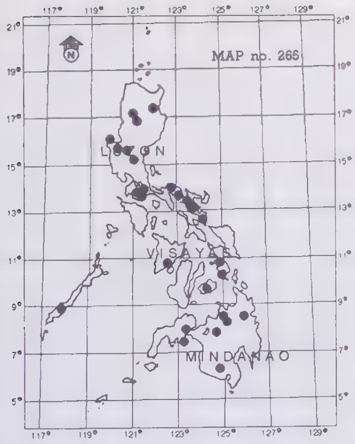
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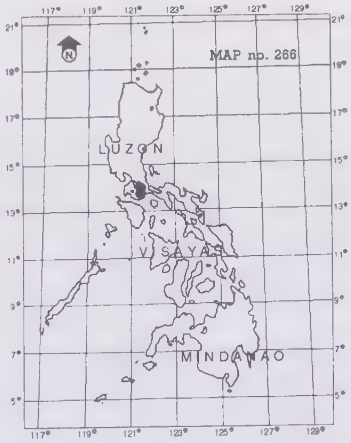
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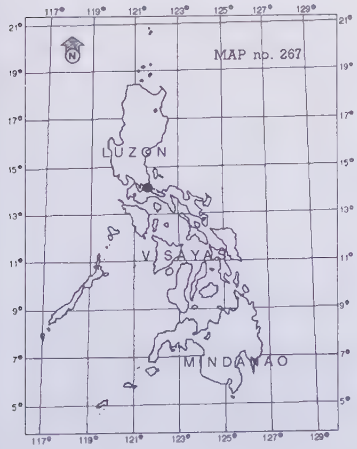
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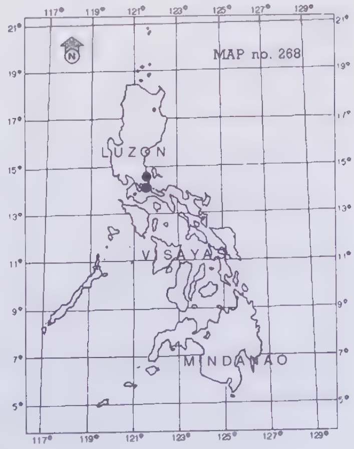
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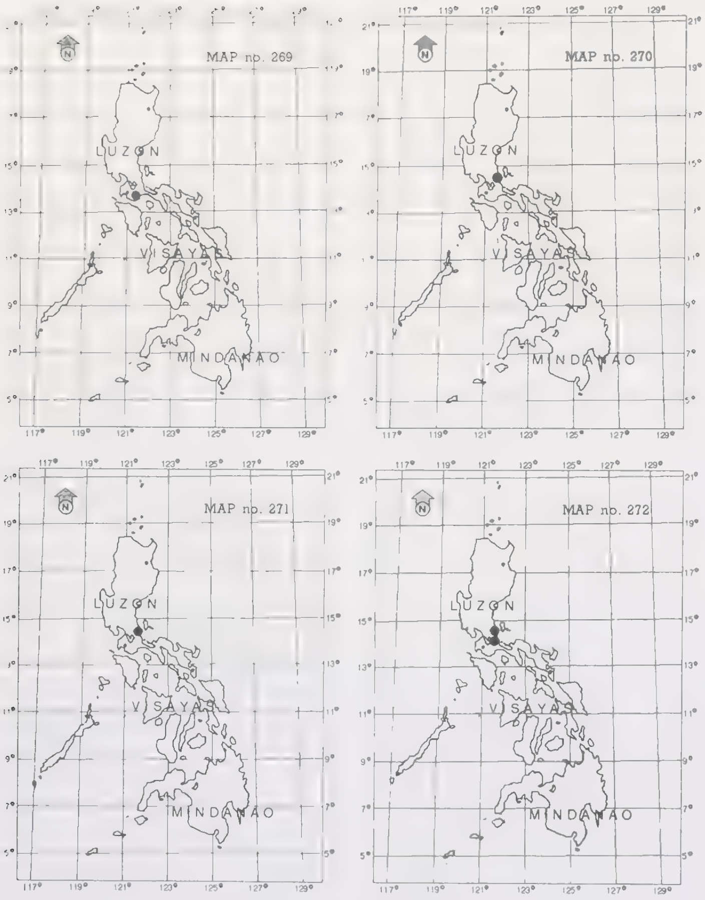
Maps 257–260. Distribution of *Tetragnatha llavaca* n. sp. (257); *Tetragnatha virescens* Okuma (258); *Tetragnatha vermiformis* Emerton (259); and *Tetragnatha okumae* n. sp. (260).

Maps 261–264. Distribution of *Tetragnatha iwahigensis* n. sp. (261); *Tetragnatha maxillosa* Thorell (262); *Tetragnatha ceylonica* Cambridge (263); and *Tetragnatha mandibulata* Walckenaer (264).

Maps 265–268. Distribution of *Tetragnatha nitens* (Auduoin) (265); *Phonognatha guanga* n. sp. (266); *Meta baywanga* n. sp. (267); and *Meta tiniktirika* n. sp. (268).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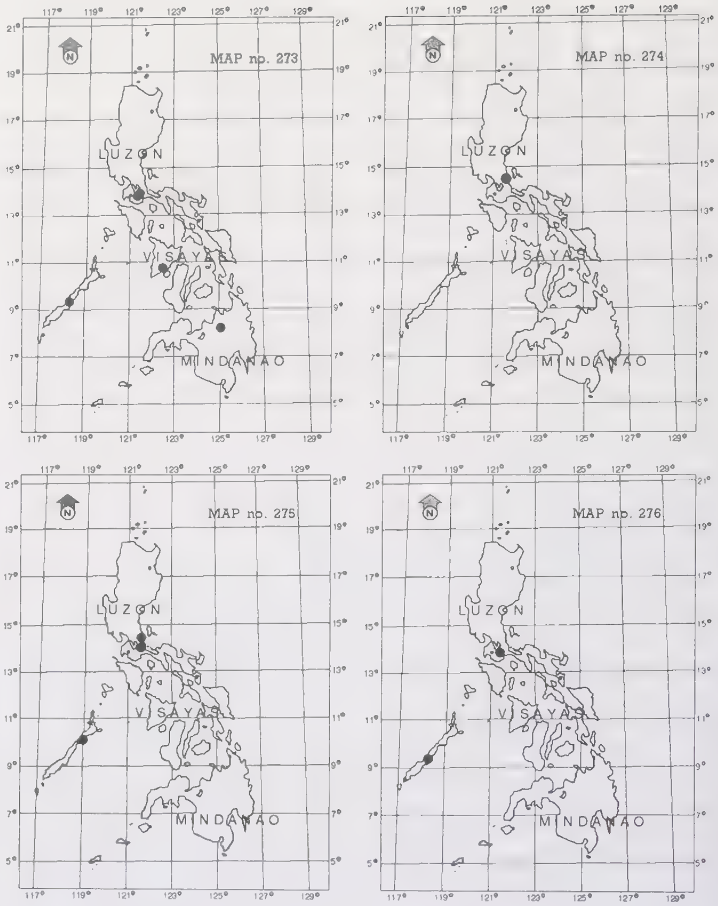
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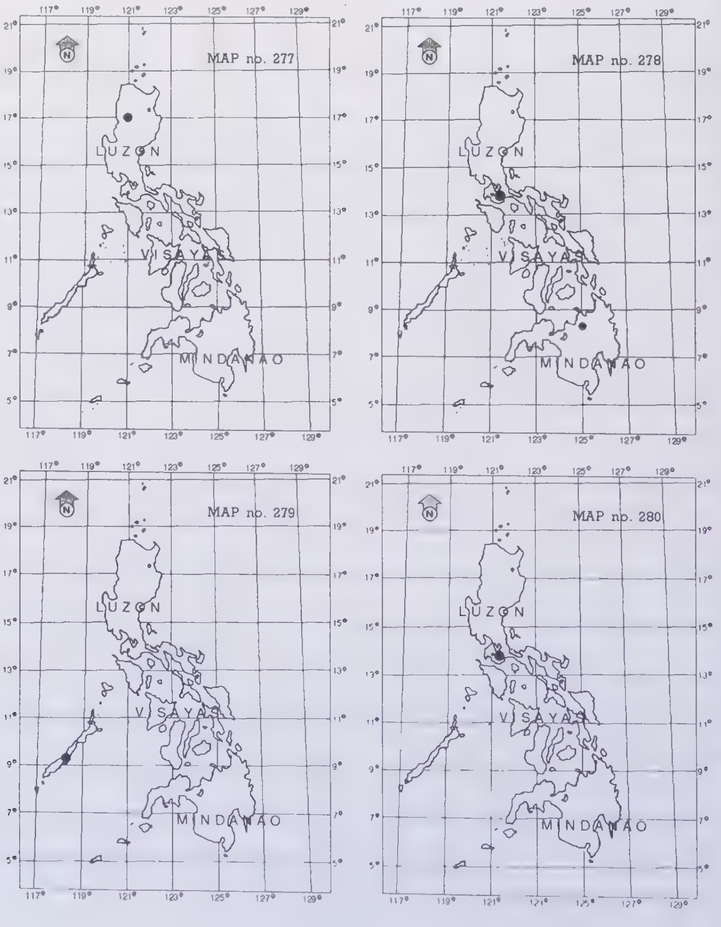
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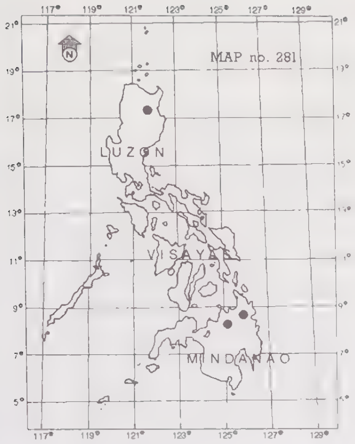
Maps 269–272. Distribution of *Tylorida striata* Thorell (269); *Mesida realensis* n. sp. (270); *Mesida matinika* n. sp. (271); and *Leucauge parangscipinia* n. sp. (272).

Maps 273–276. Distribution of *Leucauge decorata* (Blackwall) (273); *Leucauge mahabascapea* n. sp. (274); *Leucauge fastigata* (Simon) (275); and *Leucauge argentina* (Van Hasselt) (276).

Maps 277–280. Distribution of *Leucauge bontoc* n. sp. (277); *Leucauge celebesiana* (Walckenaer) (278); *Leucauge iraray* n. sp. (279); and *Gasteracantha janopol* n. sp. (280).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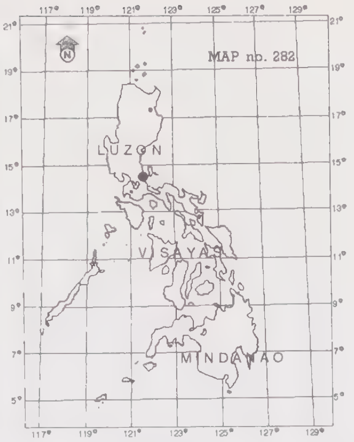
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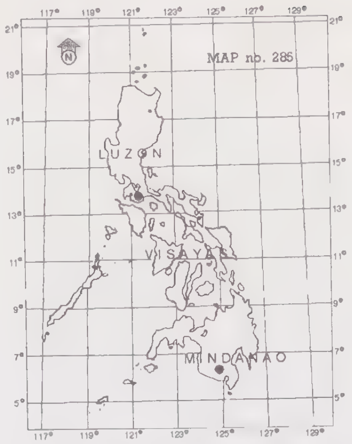
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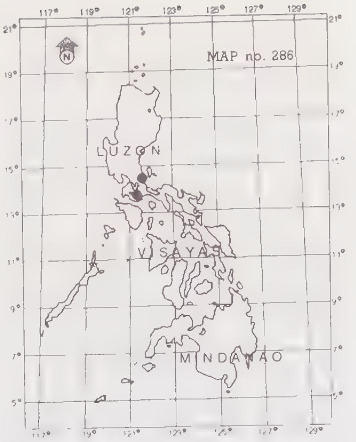
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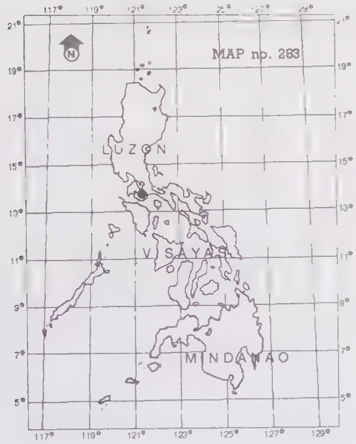
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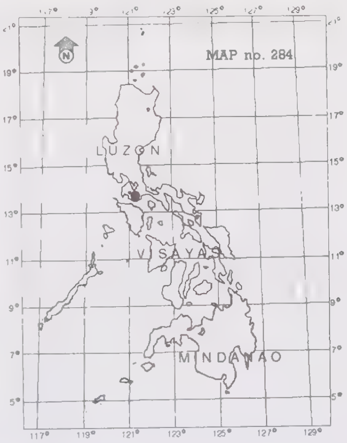
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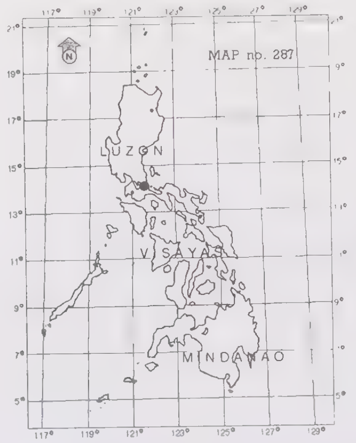
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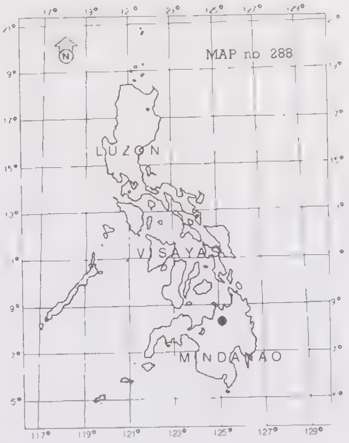
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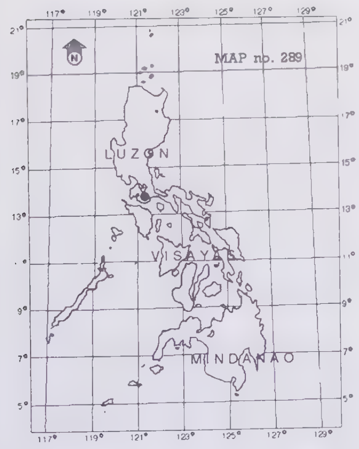
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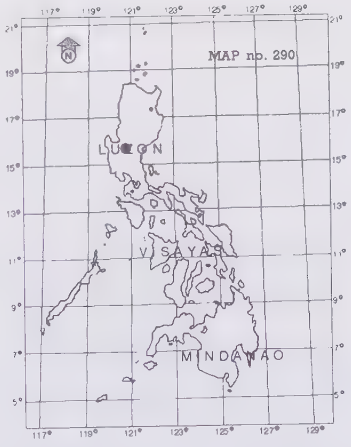
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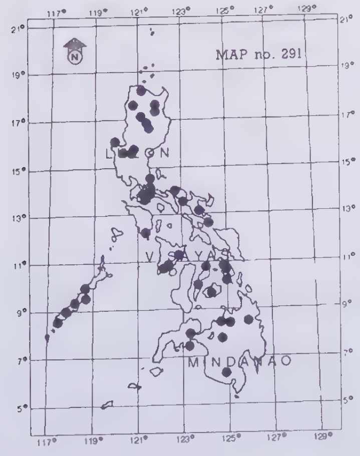
Maps 281–284. Distribution of *Gasteracantha mammosa* C.L. Koch (281); *Gasteracantha parangdiadesmia* n. sp. (282); *Gasteracantha diadesmia* Thorell (283); and *Gasteracantha kuhlii* C.L. Koch (284).

Maps 285–288. Distribution of *Nephila maculata* (Fabricius) (285); *Nephila antipodiana* (Walckenaer) (286); *Nephilengys kenmorei* n. sp. (287); and *Nephilengys malabarensis* (Walckenaer) (288).

Maps 289–292. Distribution of *Gea subarmata* Thorell (289); *Gea zaragosa* n. sp. (290); *Argiope catenulata* (Doleschall) (291); and *Argiope luzona* (Walckenaer) (292).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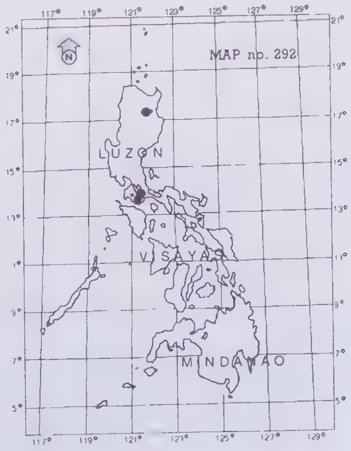
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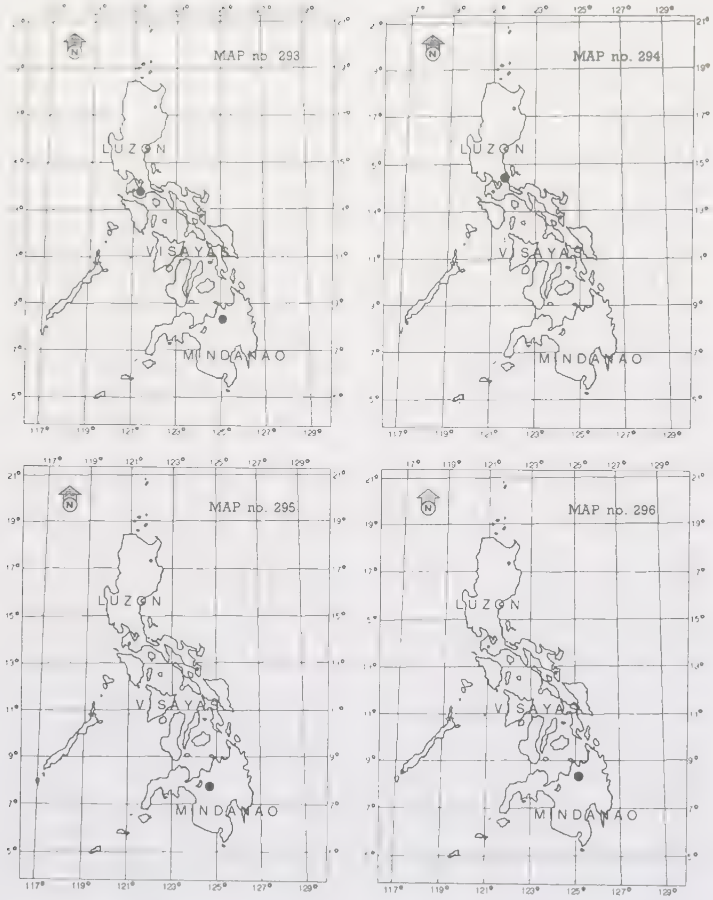
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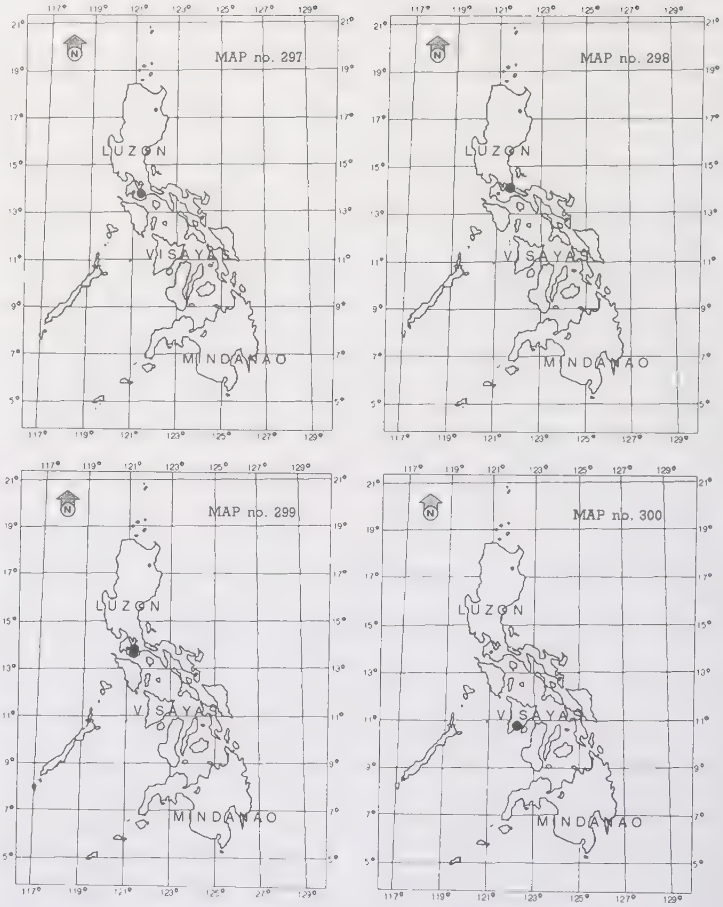
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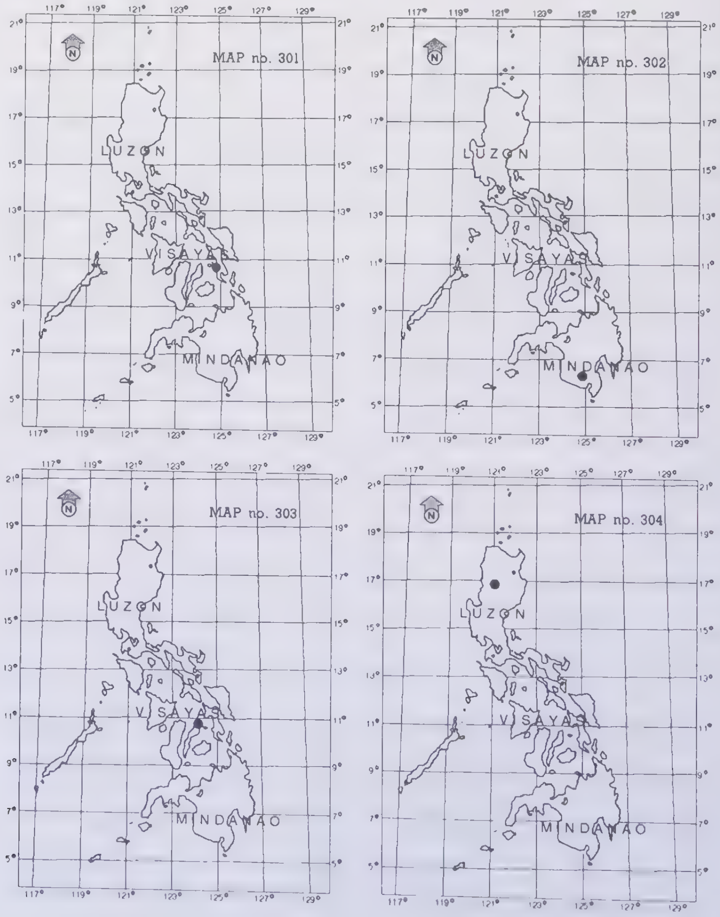
Maps 293–296. Distribution of *Argiope aemula* (Walckenaer) (293); *Argiope sapoa* n. sp. (294); *Poltys illepidus* C.L. Koch (295); and *Cyrtarachne tuladepilachna* n. sp. (296).

Maps 297–300. Distribution of *Parawixia dehaani* (Doleschall) (297); *Acusilas dahoneus* n. sp. (298); *Cyrtophora exanthematica* (Doleschall) (299); and *Cyrtophora parangexanthematica* n. sp. (300).

Maps 301–304. Distribution of *Cyrtophora unicolor* (Doleschall) (301); *Cyrtophora koronadalensis* n. sp. (302); *Cyclosa ipilea* n. sp. (303); and *Cyclosa banawensis* n. sp. (304).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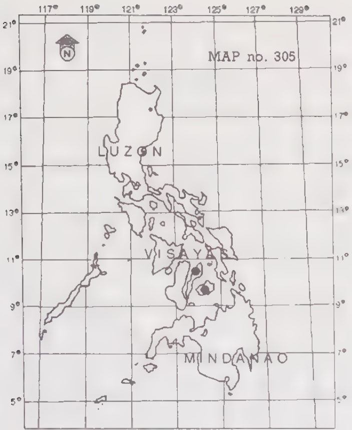
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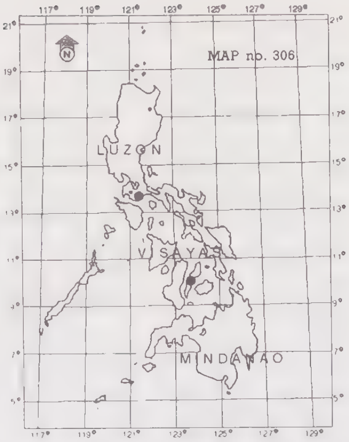
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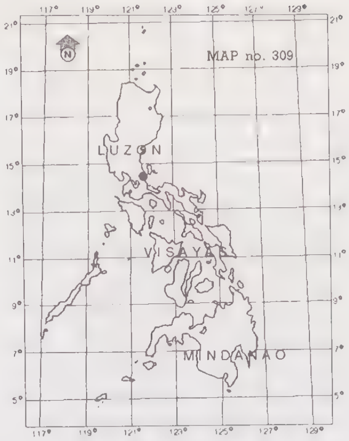
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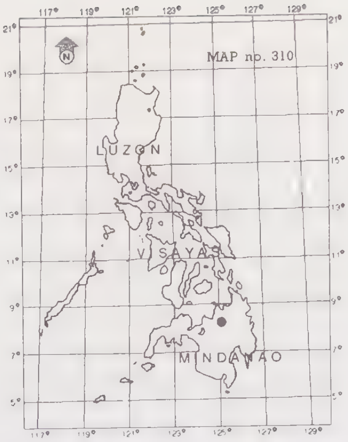
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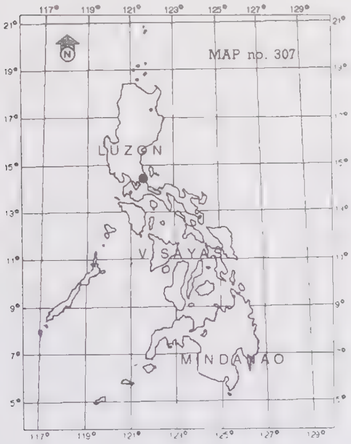
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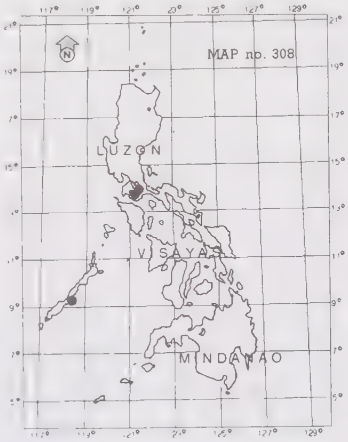
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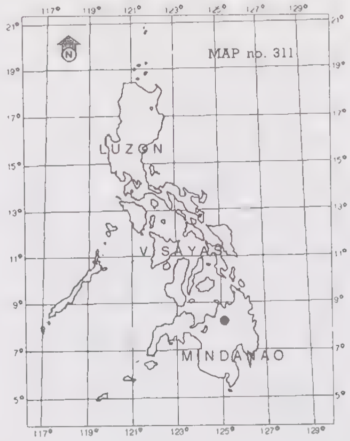
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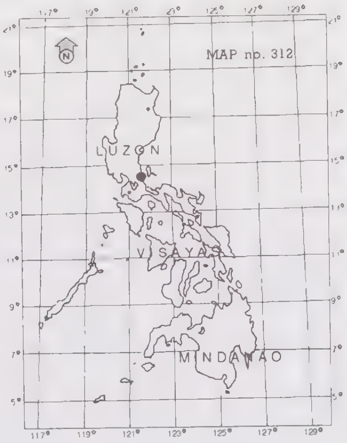
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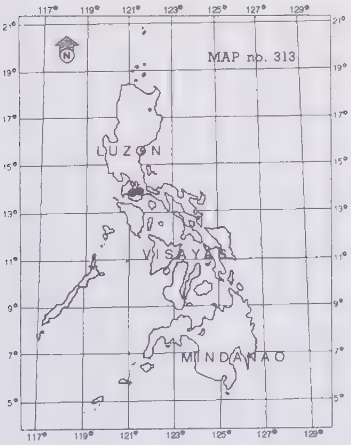
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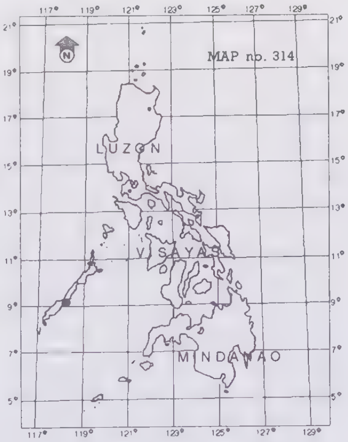
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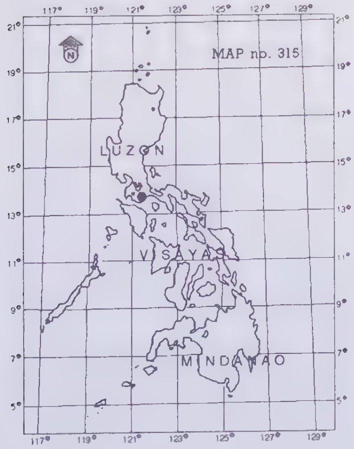
Maps 305–308. Distribution of *Cyclosa mulmeinensis* (Thorell) (305); *Cyclosa parangmulmeinensis* n. sp. (306); *Cyclosa krusa* n. sp. (307); and *Cyclosa insulana* (Costa) (308).

Maps 309–312. Distribution of *Cyclosa otsomarka* n. sp. (309); *Cyclosa dosbukolea* n. sp. (310); *Cyclosa parangtarugoa* n. sp. (311); and *Cyclosa saismarka* n. sp. (312).

Maps 313–316. Distribution of *Cyclosa baakea* n. sp. (313); *Cyclosa bifida* (Doleschall) (314); *Singa hilira* n. sp. (315); and *Hyposinga pygmaea* (Sundevall) (316).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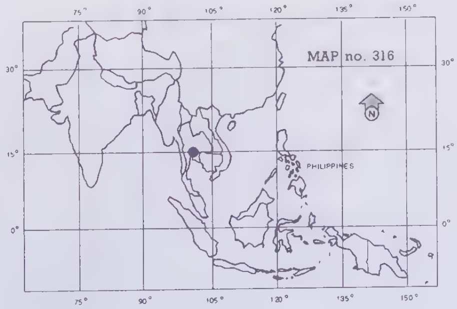
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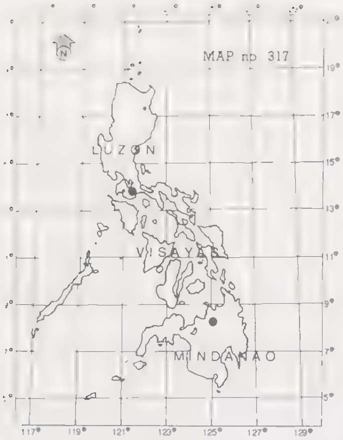
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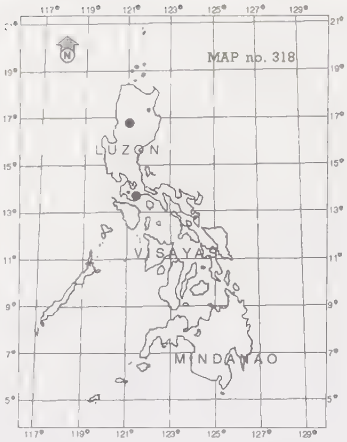
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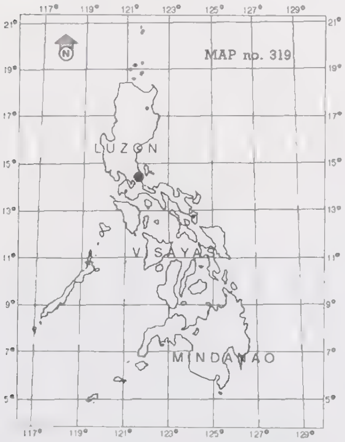
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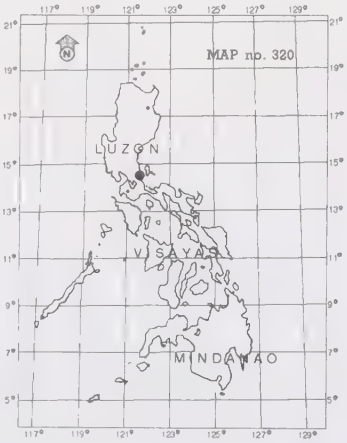
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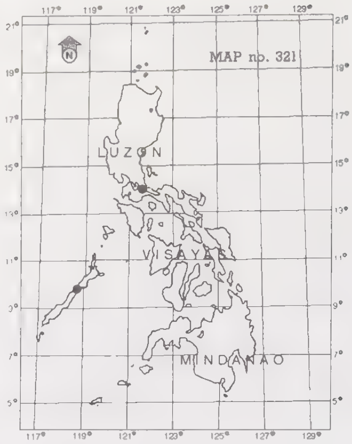
Maps 317–320. Distribution of *Larinia fusiformis* (Thorell) (317); *Larinia phthisica* (L. Koch) (318); *Larinia parangmata* n. sp. (319); and *Neoscona dostinikea* n. sp. (320).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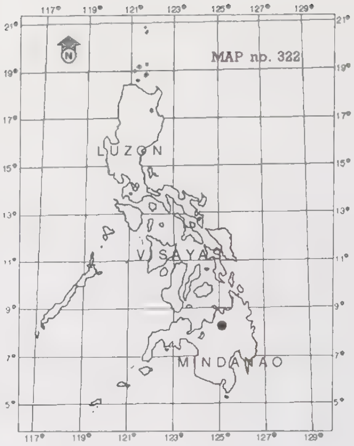
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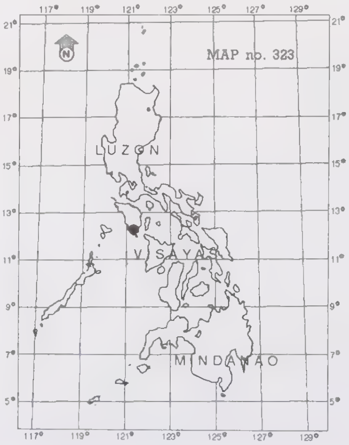
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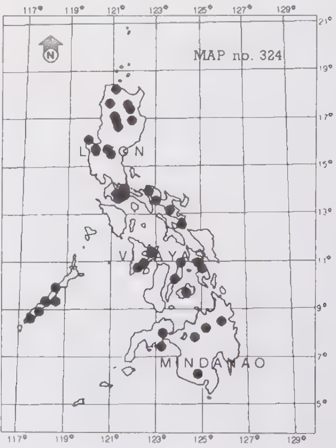
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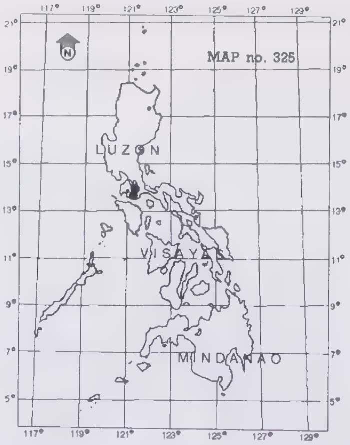
Maps 321–324. Distribution of *Neoscona yptinika* n. sp. (321); *Neoscona usbonga* n. sp. (322); *Neoscona oriemindoroana* n. sp. (323); and *Neoscona theisi* (Walckenaer) (324).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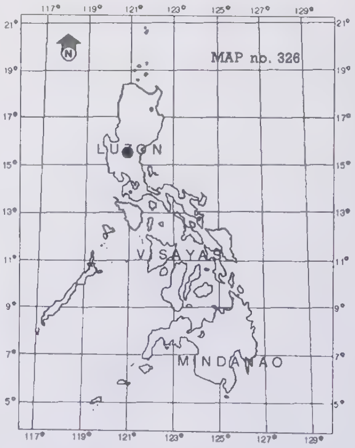
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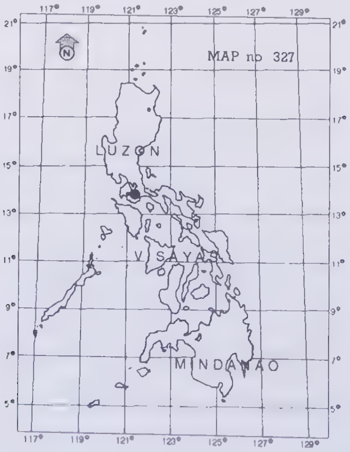
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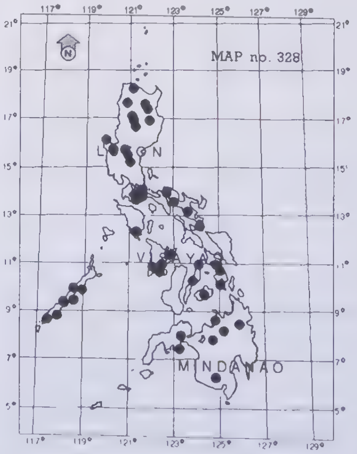
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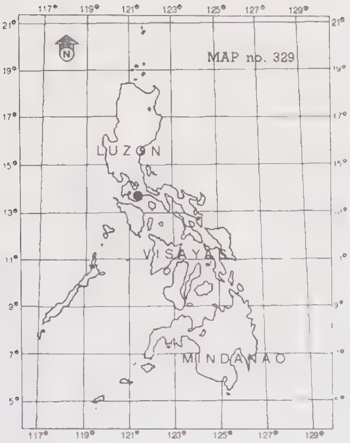
Maps 325–328. Distribution of *Neoscona molemensis* Tikader and Bal (325); *Neoscona nautica* (L. Koch) (326); *Neoscona rumpfi* (Thorell) (327); and *Araneus inustus* (C. L. Koch) (328).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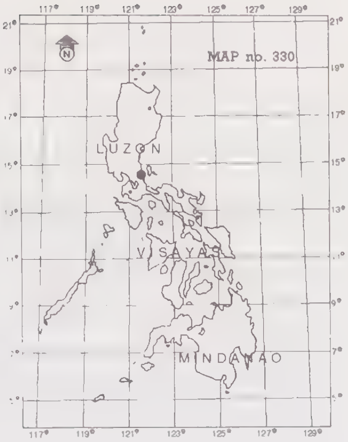
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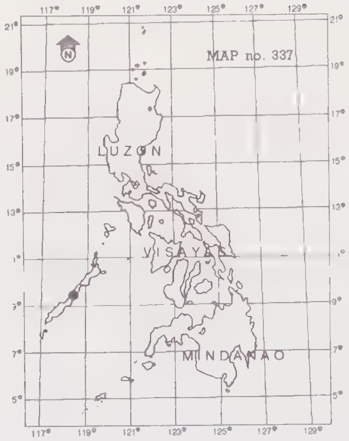
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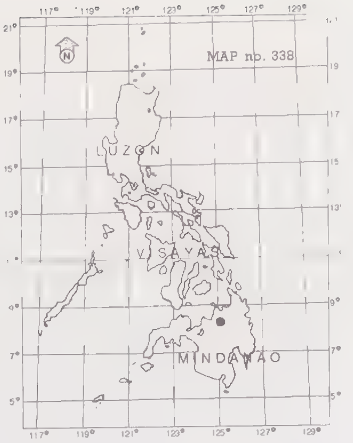
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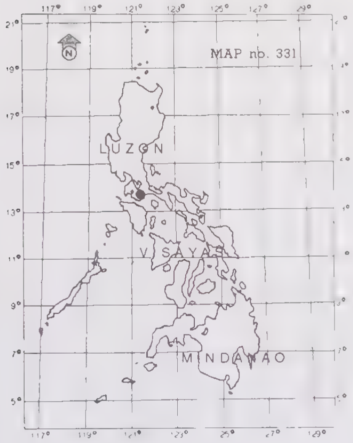
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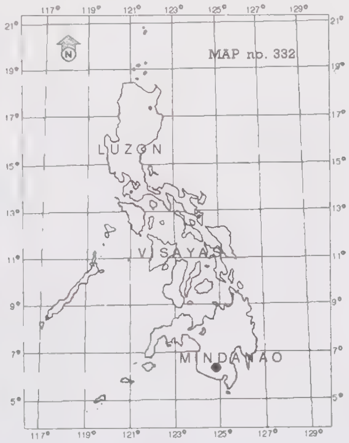
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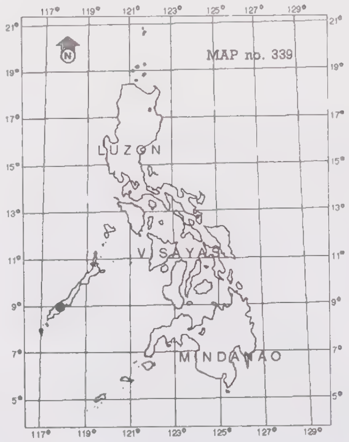
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Maps 329–332. Distribution of *Araneus tinikdikitus* n. sp. (329); *Araneus dospinolongus* n. sp. (330); *Araneus tatsulokeus* n. sp. (331); and *Araneus mitificus* (Simon) (332).

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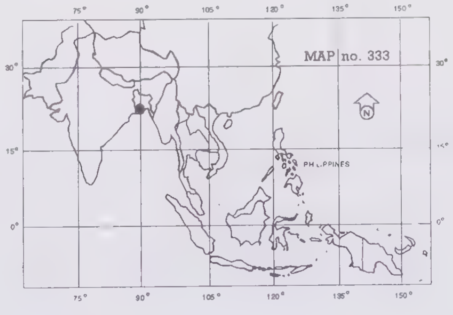
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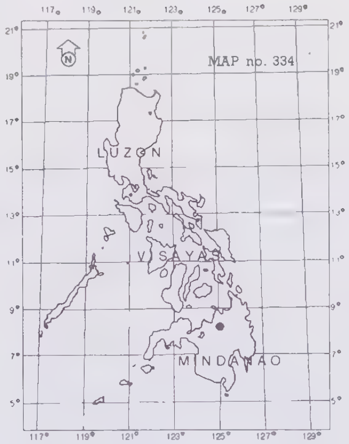
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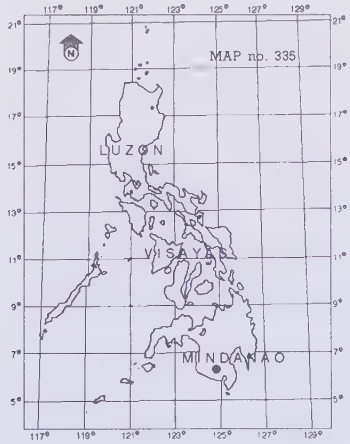
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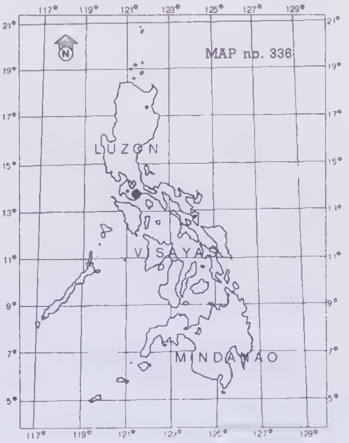
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XI Glossary

Abdomen: the second, or posterior, of the two major sections in the body of a spider; the opisthosoma.

Accessory claws: serrated bristles found near the true tarsal claws of some spiders.

AE: anterior eyes.

AEM: anterior epigynal margin.

ALE: anterior lateral eyes, also used to refer to a single eye. Usually situated at each end of the front row.

Alveolus of cymbium: the cavity of the tarsus of the male palp in which the palpal organ lies.

AME: anterior median eyes (paired). The middle pair of the front row.

Anal tubercle: a small projection at the end of the abdomen above the spinnerets, associated with the anal opening.

Anterior: nearer the front.

Anteriorly: toward the foremost end of the body.

Anterior spinnerets: the pair nearest the cephalothorax, when looking at the ventral surface of a spider.

Anterolaterally: toward the foremost end and toward the side of the body.

Anteromesial: pertaining to the foremost end of the body and to the midline.

Anteromesially: toward the foremost end of the body and toward the midline.

Apical: near or pertaining to the apex.

Apneumone: lacking book lungs. In New Zealand the typical condition for Symphytognathidae.

Apophysis (plural apophyses): a process or projection arising from a segment of the pedipalp's legs which is not readily described as a spine.

Arachnidium: collective term for the spinnerets, and cribellum when present.

Arthropoda: an assemblage of phyla, all of which possess an external skeleton and jointed limbs.

Atrial: pertaining to the atrium.

Atrium of the epigynum: the cavity found in many spiders into which the spermathecae open.

Basal: in the direction of or toward the base.

Basally: at or toward the base, or point of attachment, of an appendage or segment.

Basitarsus: the basal subdivision of the leg tarsus; missing in the palpus.

Bicleft: double-forked or split twice.

Bifurcated: forked into two.

Book lungs: respiratory pouches. One pair belonging to the second abdominal somite on ventral surface. Opening by slits along the epigastric furrow. In the Mygalomorphae and Gradungulidae a second more posterior pair present. Absent in Symphytognathidae.

Boss: a smooth prominence at the base of the chelicera in some spiders.

Bristle: a cuticular appendage which is usually long and thin. More slender than a spine and stouter than a hair.

Bulb or genital bulb: used to refer to the male palpal organ as a whole.

Calamistrum: a comb-like row of curved bristles or hairs on the dorsal or retrodorsal margin of the metatarsus of leg IV of cribellate spiders. Two rows may be present although only a single row has been recorded in New Zealand spiders.

Caput: head section of the cephalothorax.

Carapace: the hard plate forming the dorsal surface of the cephalothorax representing the fused tergites of the prosoma.

Cardiac area: a dorsal area on the abdomen overlying the heart, frequently distinctively marked.

Carina: a keel, as occurring on the clypeus or chelicerae of certain spiders.

Cephalic area: head area.

Cephalothorax: the prosoma or anterior part of the two divisions of the body into which the spider is divided. Same as carapace when used by Urquhart.

Cervical groove: the boundary between the head and the thorax. Often indistinct or lacking.

Chelicerae: the first pair of appendages of the head, consisting of a stout basal portion (paturon) and a terminal fang which fits into a groove (furrow) on the paturon.

Clavate: club-shaped, setae gradually swollen towards the tip.

Clavus: same as scape.

Claw: a short, curved, usually toothed process at the tip of the pretarsus of the leg or palpus.

Claw tufts: bunches of hairs of the tip of the tarsi of some spiders, usually associated with two claws.

Cleft: split or notched.

Clypeus: the region between the anterior margin of the carapace and the nearest eyes.

Colulus: a small, apparently non-functional median wart-like appendage, somewhat similar to a small spinneret, situated immediately in front of the spinnerets of some spiders.

Comb: a row of serrated bristles below the fourth tarsi of spiders belonging to the family Theridiidae.

Compound seta: a seta with branches along its shaft.

Concolorous: same color as.

Conductor: a structure in the palpal organ of some male spiders which is parallel to or associated with the embolus for all or part of its length.

Copulatory opening: the paired opening in the epigynal plate; they receive the male emboli during copulation.

Copulatory tubes: the paired tubes leading inward from the copulatory openings to the spermathecae.

Cordate: heart-shaped.

Corrugation: wrinkled with furrows.

Coxa: the segment of the leg nearest to the body.

Cribellate: a general term used to refer to a spider possessing a cribellum and calamistrum.

Cribellum: a plate-like spinning organ anterior to the spinnerets in some spiders.

Cuticle: the outer layer of the body wall.

Cymbium (plural cymbia): functioning as a composite spinneret; when reduced in size it is referred to as a colulus. The portion of the hollowed-out male pedipalp tarsus that receives the palpal organ.

Dentate: toothed.

Denticle: a small tooth.

Diad: group of two, a pair.

Diaxial: used to described chelicerae where the paturon projects forward or down but the fang is so articulated that it moves transversely.

Dionychous: possessing two claws on the tarsus.

Distal: towards the posterior end.

Distally: toward the distal end of a leg or palpus.

Distitarsus: the distal subdivision of the leg tarsus.

Distomesial: pertaining to the uppermost tip of the midline.

Distomesially: pertaining to the uppermost surface of the body or of an appendage.

Dorsal furrow: a median groove or furrow on the carapace, often pigmented.

Dorsal groove: same as thoracic groove.

Dorsally: toward the dorsum.

Dorsum: the upper side of the body.

Ecribellate: not possessing a cribellum and calamistrum.

Ejaculatory duct: the slender tube extending from the apical portion of the bulb to the embolus through which the sperms are transferred during copulation.

Emarginate: having a notched margin.

Embolus (plural emboli): the intromittent portion of the male copulatory organ containing the terminal portion of the ejaculatory duct; it is the elongated spine-shaped tip of the male genital pedipalp, usually dark, controlling the rest of the intromitted organ.

Endite: a plate-like lateral mouthpart formed by an extension of the basal segment of pedipalp; the maxilla.

Endocheliceral: contained within the chelicera as with the venom glands of the Mygalomorphae.

Entelegyne: vulva having separate insemination ducts (opening at gonopores on epigynum) to and fertilization ducts from the spermathecae (to uterus).

Epigastric: pertaining to the ventral side of the abdomen.

Epigastric furrow: the transverse fold on the ventral surface of the abdomen marking the posterior limit of the second abdominal somite. The anterior pair of book lungs opens at the edge of the furrow as does the gonopore. The epigynum lies in front of this furrow in females.

Epigastric plates: thickened sclerites found on the ventral surface of the abdomen below the book lungs or in apneumone spiders below the anterior trachea.

Epigastric scute: a thickened plate anterior to the epigastric furrow, sometimes encircling the pedicel and sometimes with extensions posterior to the furrow.

Epigastrium: the portion of the abdomen on the ventral surface anterior to the openings of the book lungs, anterior spiracles, and genitalia.

Epigynum (plural epigyne): a sclerotized plate associated with the gonopore of females containing openings through which the sperm is passed into the spermathecae.

Face: a general term for the clypeus, eyes, and head when viewed from in front.

Falces: chelicerae.

Fang: the slender piercing apical segment of the chelicera. The poison duct opens near its distal end.

Fang furrow: a depression along the the distomesial surface of the venom gland open at its tip.

Fang groove: the groove at the distal end ot the paturon in which the fang rests.

Fang guide: a common term in Tetragnathidae referring to the cheliceral armature called guide tooth located on the dorsal and ventral part of chelicerae.

Fang of chelicera: the distal portion of the chelicera which articulates with the paturon within which the poison duct passes.

Fasciculi unguiculares: claw tufts.

Femoral index: a figure used to compare the relative thickness of femora, obtained by dividing the length of the femur into 100 times the maximum width of the femur.

Femur (plural femora): the third segment of the palp and legs from the base of the appendage.

Fertilization tubes: the paired tubes by which semen stored in the spermathecae is conveyed to the eggs as they pass out of the body.

Fissidentate: teeth having more than one point, usually used with reference to teeth on the retromargin of the cheliceral fang furrow in some Salticidae.

Foliate: referring to abdominal pattern with scalloped, leaf-like margins.

Folium (plural folia): used in general way to refer to a well-defined pattern down the median dorsal surface of the abdomen; in particular, to a pattern which by virtue of a scalloped margin may appear leaf-like.

Fossa of the epigynum: a depression or cavity present in the epigynum of some spiders into which may open the ducts to the spermathecae.

Fovea (plural foveae): a depression on the thoracic region of the carapace where muscles are attached. May be longitudinal, transverse, or absent.

Front: the part of the carapace between the anterior margin and the anterior row of eyes.

Geniculate: knee-like. Used to refer to chelicerae where the base is thickened so that the anterior face projects forward from the clypeus before sloping down vertically to the fang.

Genital bulb: male palpal organ.

Genital furrow: same as epigastric furrow.

Genital groove: a transverse groove on the venter of the abdomen in which lie the openings of the internal genitalia (ovaries or testes) and a pair of book lungs.

Genitalia: ectodermal structures involved in copulation, fertilization, and oviposition.

Genital opening: in female, opening of uterine duct in furrow between anterior book lungs; in male, opening of duct from testes in furrow between anterior book lungs.

Gnathocoxal lobe: same as maxilla.

Gonopore: entrance to insemination duct on epigynum.

Guide pocket: a ridge-like elevation in an epigynum dividing the depression into two.

Hackled: mangled appearance.

Haplogyne: vulva having same ducts (via uterus) to spermathecae for both insemination and fertilization.

Head (= cephalic) region or simply head: the anterior portion of the carapace bounded by the thoracic groove and bearing the eyes.

Hematodocha: a sac-like structure attached to the cymbium, between the cymbium and the other portions of the palpal organ of the male. Distended during copulation.

Heterogeneous: unlike; refers to coloration pattern of the eyes when some are dark and some light.

Hirsute: hairy in appearance.

Holotype: a single specimen designated as the name-bearing type of a species, or a single specimen on which the taxon was based in the absence of a specified type.

Homogeneous: alike; refers to the coloration pattern of the eyes when all are of the same color or appearance.

Hood: a pocket-like structure at the anterior end of the epigynum of many spiders.

Humeral: anterlateral (shoulder) area of dorsal abdomen.

Humeral tubercles: humps or knobs at the anterolateral dorsal surface of the abdomen.

Hypochiloid: belonging to primitive group of four-lunged araneomorph spiders.

Inferior claw: the single claw ventral to the paired claws in spiders with three claws.

Inframamillary: below or anterior to the spinnerets.

Inframamillary organ: cribellum.

Insemination duct: see entelegyne.

Internal genitalia: a cumulative term used for the internal structures associated with the epigastrium of the female.

Interpulmonary furrow: epigastric furrow.

Labial palp: the second appendages of the cephalothorax, posterior to the chelicerae and anterior to the legs, also called palps or pedipalps.

Labium: the median sclerite on the ventral surface of the cephalothorax between the maxillae and anterior to the sternum, to which it is articulated or fused.

Labrum (rostrum): upper lip, anteroventral part of cephalothorax below the cheliceral insertion.

Lamella: a triangular plate on the promargin of the cheliceral furrow (Pholcidae) or an elongate thin plate extending along the furrow (Agelenidae).

Lamina: a flattened plate-like structure such as occurs on the margins of the cheliceral fang furrows in some spiders.

Lateral: towards the side of the body.

Laterally: toward one side.

Lateral condyle (of chelicera): same as boss.

Lateral eyes (LE): the eyes at the ends of the row in which they lie – usually the ALE and PLE.

Laterigrade: a sideways type of motion (crab spiders). Also the way the legs are turned so that the morphologically dorsal surface is posterior and the prolateral surface appears to be dorsal.

Leg formula: the relative length of the legs represented by the first four numbers in sequence of greater length. For example, 1423 means that the first leg is longest and the third shortest.

Leg index: a figure for comparing the relative lengths of the legs. It is obtained by dividing the length of the leg, not including the coxa and trochanter, into 100 times the length of the carapace.

Lip: same as labium.

Longitudinal: along the midline of the body extending from the eyes to the anus.

Lorum: the sclerites representing the tergum of the pedicel.

Lower claw: median claw.

Lung slits: the openings of the book lungs. One pair is located along the epigastric furrow. If a second pair of book lungs is present, the slits are posterior to the epigastric furrow.

Lyriform organ: minute sense organs indicated externally by small slits. Found all over the body but more commonly on the legs.

Macroseta: thick non-movable seta.

Mamillae: spinnerets or spinners.

Mandibles: in early literature used incorrectly for chelicerae.

Mastidion: a small denticle or tubercle on the anterior face of the chelicerae of some spiders.

Maxilla (plural maxillae): one of the pairs of mouthparts ventral to the mouth opening and lateral to the labium. Formed from the coxae of the palp.

Median: along the main longitudinal axis of the body.

Median apophysis: sclerite (usually movable) on palpal bulb.

Median apophysis of the palpal organ: an appendage arising from the middle division of the male palpal organ of some spiders.

Median claw: inferior claw.

Median eyes: the two middle eyes of each row.

Median lamella: thin plate on inside edge of chelicerae, usually produced into tooth-like structure on which the fang closes.

Median ocular area: the region of the carapace enclosed by the median eyes of the anterior and posterior rows.

Median ocular quadrangle: the area limited by the four median eyes, including the eyes themselves.

Median septum: a longitudinal sclerite on the floor of the epigynal atrium.

Median spinnerets: the centre pair, which are small and often hidden by other spinnerets.

Mesial: pertaining to the midline.

Mesially: toward the midline.

Metatarsus (plural metatarsi): the sixth and next-to-last segment of the legs counting from the base. Not present in the palp.

Midline: an imaginary line dividing the body or an appendage lengthwise into right and left halves.

MOA: median ocular area.

MP: the midpiece of the epigynum.

Mygalomorph: having the form of Mygalae. The term is applied to trap-door and funnel-web spiders.

Ocellus: a simple eye, as opposed to compound eyes.

Ocular band: the field of the carapace delimited by the eyes.

Ocular group: used to refer to the eyes as a whole.

Ocular quadrangle: the area delimited by the eyes in the Salticidae.

Ocular tubercle: a protuberance on which one or more of the eyes is borne.

Onychium (plural onychia): nail or hook-like structure in the tarsus.

Orb: a web consisting of circular strands and radii, in one plane.

Ovate: egg-shaped.

Palea: a plate at the distal end of the genital bulb of most wolf spiders.

Paleal process: a sclerotized prominence situated distally on the palea of certain wolf spiders.

Palp: those segments of the pedipalp distal to the coxa.

Palp coxal lobes: the paired mesial lobes on the prolateral surfaces of the palpal coxae; they close the sides of the preoral cavity.

Palpus (plural palpi): one pair of leg-like appendages arising between the mouth and the first pair of legs; in adult male spiders, modified as an organ for copulation and for storing semen.

Paracymbium (plural paracymbia): an accessory branch of the cymbium, arising near the base.

Paratype: a specimen, other than the holotype, upon which an original specific description is based.

Paraxial: the condition where the paturon projects forward and the fang is articulated so that it moves more or less parallel with the axis of the body.

Pars cephalica: same as head.

Pars pendula: a membanous structure of the male genitalia containing the ejaculatory duct and mostly lying within a groove of the embolous.

Pars thoracica: same as thorax.

Patella: the fourth segment of the leg or pedipalp from the base.

Paturon: the basal segment of the chelicera to which the claw is located between the femora and tibia resembling a short upper joint articulated apically.

PE: posterior eyes.

Pectinate: set with teeth in a row as in a comb.

Pedicel: a stalk or stem connecting the cephalothorax to the abdomen.

Pedicle: the narrow connection between the cephalothorax and abdomen.

Pedipalp (plural pedipalps): the second appendages of the cephalothorax, posterior to the chelicerae.

Peg teeth: teeth in sockets on cheliceral margin.

Plagula: the sclerite, when present, representing the sternum of the petiolus.

PLE: posterior lateral eyes (paired).

Pluridentate: having more than one tooth. In Salticidae used to categorize groups having two or more teeth on the retromargin of the cheliceral furrow.

PME: posterior median eyes (paired).

Porrect: when chelicerae are pointed forward.

Posterior: towards the rear of the body.

Posterior lateral eyes (PLE): the eyes at the ends of the second row.

Posterior median eyes (PME): the two intermediate eyes of the second row.

Posterior spinnerets: the hind pair when looking at the ventral surface of a spider.

Praetarsus: same as onychium.

Proclaw: the superior claw nearest the prolateral surface of the tarsus.

Procursus: elaborate paracymbium of Pholcidae.

Procurved: a concave arc commonly used to describe an eye row when the lateral eyes are anterior to the median eyes. A transverse line that is deflected posteriorly along the midline and hence the ends point forward.

Prograde: locomotion in a forward direction or with the form of legs suitable for this movement, referring to the usual leg placement of spiders in which all legs are held in the vertical plane and the morphologically anterior faces all point forward.

Prolateral: the surface of the appendages of the cephalothorax nearest the anterior end of the body when the true dorsal surface is uppermost.

Promargin: the margin of the cheliceral furrow distal to the maxillae – sometimes called the upper margin.

Protarsus: same as metatarsus.

Proximal: near the base.

Pseudonychia: same as accessory claws.

Radial furrows: same as striae.

Radix: basal segment of the embolic subdivision.

Rastellum: a series of spurs or teeth forming a rake-like organ that is used for digging.

Rebordered: with a thickened edge. Refers to the anterior margin of the labium (lower lip) which is greatly thickened and projects ventrally at the surface of the sternum.

Receptacula: the seminal vesicles or spermatheca of the internal genitalia.

Recurved: the posterior displacement of the ends of a transverse, otherwise straight row of eyes or grooves, or a transverse line that is deflected anteriorly at the midline and hence the ends point backwards.

Reniform: kidney-shaped.

Retroclaw: the surface of the leg or palp nearest the posterior end of the body when the appendage is viewed with the dorsal surface uppermost.

Retrolateral tibial apophysis: spine or tooth-like process in the tibia of male pedipalp, extended at right angles to the body.

Retromargin: the margin of the cheliceral furrow nearer to the maxillae.

Saltigrade: a jumping type of locomotion.

Scape of the epigynum: an appendage, usually soft and flexible, lying in the middle line of the epigynum.

Sclerotized: hardened by deposition of sclerotin or other substances in cuticle.

Scopula (plural scopulae): a brush of hairs found on the promargin of the chelicerae, the distal end of the maxillae, or the ventral surface of the tarsi and metatarsi of some spiders.

Scutum (plural scuta): sclerotized plate on abdomen of some spiders.

Serrated: saw-like.

Serrated bristles: a type of bristle that is slightly curved and bears serrations along one side. May be found as false claws in some spiders or as a row on the ventral surface of the fourth tarsi in some Theridiidae.

Serrula (plural serrulae): a uniform row of small teeth on the distal surfaces of the maxillae of many spiders.

Seta (plural setae): slender pointed cuticular structure on body and legs.

Sieve plate: a sclerotized band seen on the internal duct of the male palpal organ of some Oonopidae bearing the openings for the ducts from the palpal gland. Also more commonly used to refer to the openings on the maxillae from the maxillary glands.

Sigillum (plural sigilla): slightly indented area, free of hairs and usually with oval attachments, on the sternum of Mygalomorph spiders.

Sigilla ratio: three figures representing in arbitrary units the separation of the sigilla from the margin of the sternum, the greatest width of the sigilla, and the distance apart of the sigilla, in that order, with the width of the sigilla enclosed in brackets, e.g. 6(5)10 or if sigilla marginal (5)10.

Sinuous: curved in and out.

Sinus: pocket.

Slit organ: same as lyriform organ.

Spermatheca (plural spermathecae): seminal receptacle in the epigynum.

Spigots: set guides.

Spination: the arrangement of the spines on the leg and palps.

Spine: a cuticular appendage, heavier than a bristle and usually articulated.

Spinnerets: any of three pairs (usually) of silk-producing tubercles. The anterior or ventral are lowermost, the posterior or dorsal are uppermost, and the median, which are often small, are between them.

Spiracle: same as tracheal spiracle.

Spur: a cuticular appendage considerably heavier than a spine, used loosely both for an articulated structure and for an unarticulated outgrowth from the cuticle.

Spurious claws: same as accessory claws.

Squamose: flattened, scale-like.

Stabilimentum: a band of dense silk in a web.

Sternum: the plate on the ventral surface of the cephalothorax lying between the coxae and behind the labium.

Stigmatic plates: same as epigastric plates.

Striae: paired depressions or lines extending out from the centre of the carapace to the edges, often originating from the fovea when this is present.

Stridulating area: an area with numerous parallel grooves or modified spines presumed to be used for stridulation.

Stridulating organ: any of various noise-making structures on the surface of the body, consisting of a series of adjacent parallel ridges as one body part against which a series of pegs in another body part is rubbed.

Style: same as embolus, often used with reference to simple palpal organs.

Sub (used as prefix): almost, close to.

Subtegulum: a ring-like sclerite in the wall of the genital bulb.

Superior claws: the larger paired claws at the end of the tarsi.

Sustentaculum: a strong spine bent upwards at its tip, inserted on the ventral surface of the fourth tarsus near claws of some Epeiridae.

Tarsal comb: a row of serrated bristles on the ventral surface of the fourth tarsus of some Theridiidae.

Tarsal drum: same as tarsal organ.

Tarsal notch: an indentation of the margin of the cymbium of the palp of some spiders.

Tarsal organ: a small smooth raised area with a minute apical pore on the dorsal surface of the tarsus of some spiders, often seen as a pale spot.

Tarsal rod: an erect rod-like structure on the dorsal surface of the tarsi of the legs of some Agelenidae.

Tarsal spine: same as sustentaculum.

Tarsal thorns: two short, stout bristles found on the distodorsal surface of the tarsi of the legs of some Oonopidae.

Tarsal tubercle: a low tubercle with bristles on the dorsal surface of the tarsi of the legs of some Oonopidae.

Tarsus (plural tarsi): the last segment of the leg or palp bearing the claws.

Teeth: stout selerotized apophyses, unarticulated and usually pointed apically, such as those found on the margins of the cheliceral furrow.

Tegular lobe: a sclerotized prominence situated retrolaterodistally on the tegulum of certain wolf spiders.

Tegulum (plural tegula): the sclerite forming the wall of the median division of the palpal organ in the male genitalia.

Teneral: freshly molted spiders which have not attained their full coloration.

Tergum: upper or dorsal surface.

Terminal apophysis: a strongly sclerotized structure present in the embolic division of the palpal organ of some spiders.

Third claw: same as inferior claw.

Thoracic area: that portion of the carapace posterior to the cervical groove.

Thoracic furrow: same as fovea.

Thoracic groove: same as fovea.

Thoracic region; the posterior part of the cephalothorax.

Thorax: same as thoracic region.

Tibia (plural tibiae): the fifth segment of the leg or palp counting from the base, usually the second longest and second most robust.

Tibia index: a figure used to compare the relative thicknesses of different legs. Obtained by dividing the combined length of the patella plus tibia into 100 times the width of the patella.

Tibial apophysis: the apophysis on the tibia, usually retrolateral in position, of the male palp of some spiders.

Tm: metatarsi, Tm I means metatarsi I, usually used as an index by measuring Tm length (l) divided by its diameter (d) at greatest width.

Tooth: a spine found on the margins of the fang furrow and assisting in feeding; a tooth-like structure; a small outgrowth on the paired claws of the legs.

Tracheae: internal tubular respiratory organs.

Tracheal spiracle: the opening of the tubular tracheae on the ventral surface of the abdomen.

Transverse: lying at right angles to the longitudinal axis of the body.

Transverse band: a band broader than long running across a body part.

Triad: group of three.

Trichobothrium (plural trichobothria): a very fine hair of variable length arising from a hemispherical socket on leg or palp and extending out at right angles to the surface of the leg.

Tridentate: having three teeth.

Trifid: cleft in three.

Trionychous: having three claws per tarsus.

Trochanter: the second segment from the base of a leg or a palp.

Truncate: square at the tip rather than rounded or pointed.

Truncus: the hard portion of the embolus.

Tubercle: a low, rounded process (bump).

Ungues: same as superior claws.

Unguiculus: same as inferior claws.

Unguis: same as fang.

Unidentate: having one tooth. Used to particularize those Salticidae having only one tooth, and that with a single point, on the retromargin of the cheliceral groove.

Upper claws: same as superior claws.

Venom gland: the venom-secreting gland within the chelicera (and sometimes through the chelicera and into the cephalothorax); its duct opens at the tip of the fang.

Venter: underside of the abdomen.

Ventral: lower (surface), underside, opposite dorsal.

Ventrally: toward the venter.

Vulva: same as epigynum.

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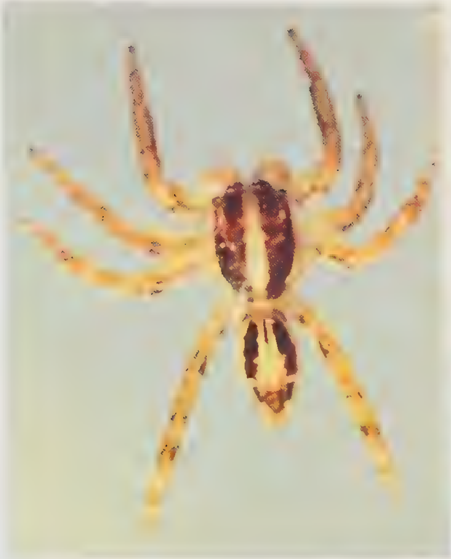
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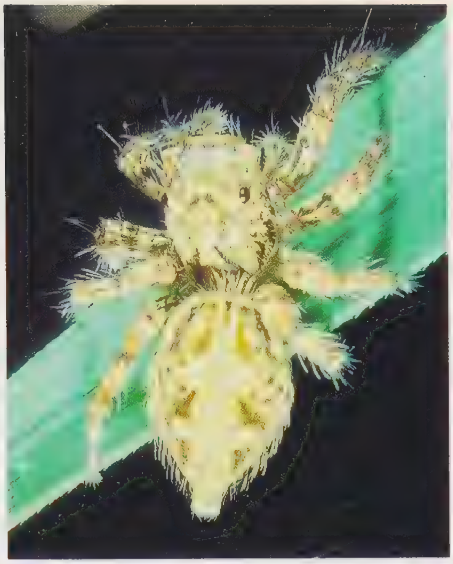
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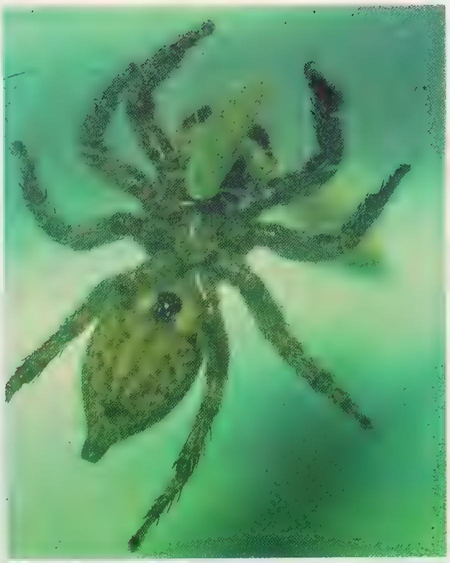
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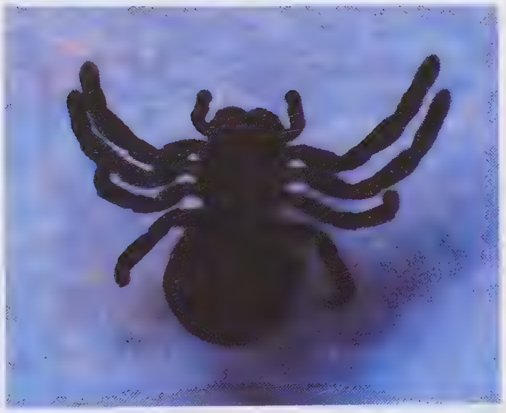
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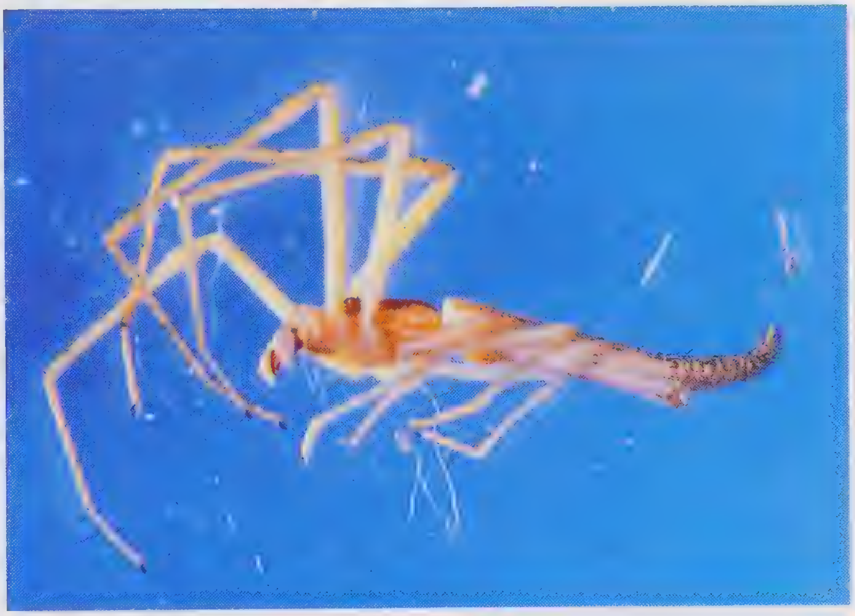
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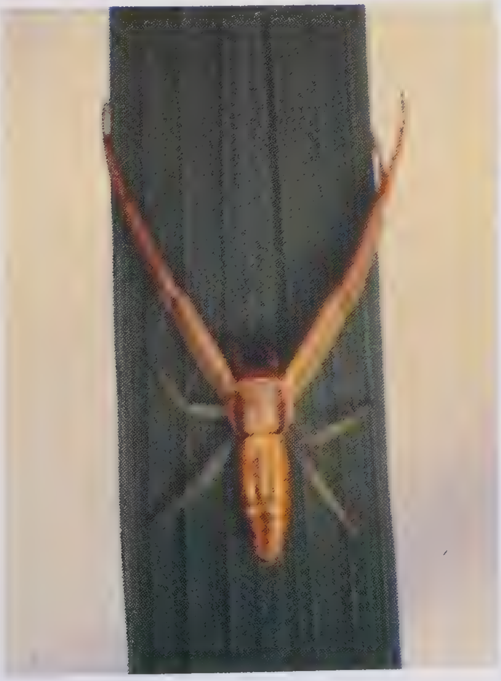
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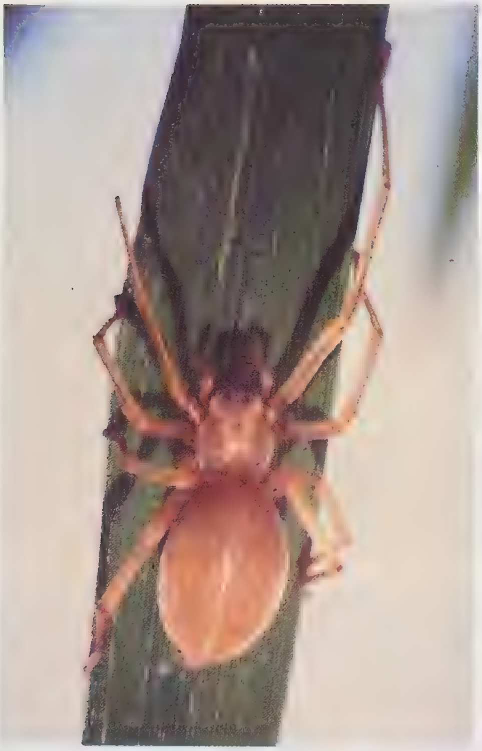
S2 *P. paykulli* (Auduoin), female.
S3 *P. paykulli* (Auduoin), female feeding on a green leafhopper nymph.
S4 *Stiphropus sangayus* n. sp., female.
S5 *Monaeses habamatinikus* n. sp., male.
S6 *Runcinia albostriata* Boesenberg and Strand, female.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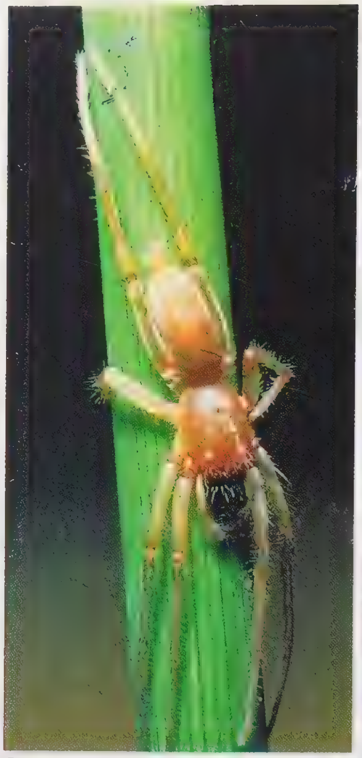
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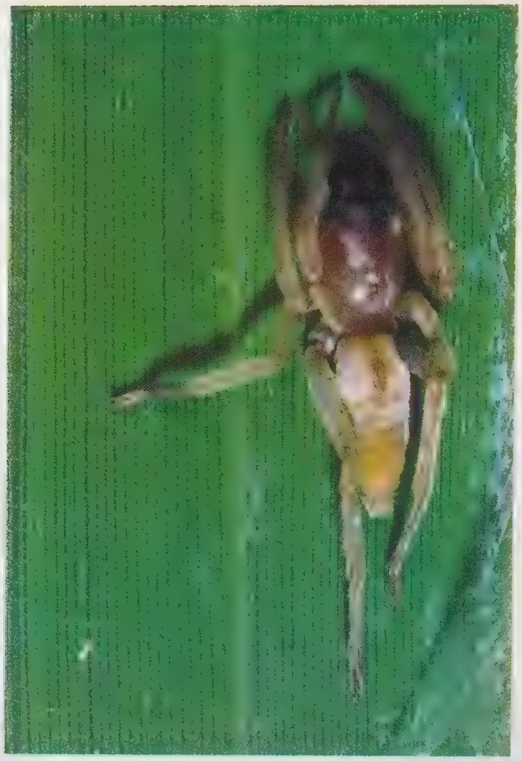
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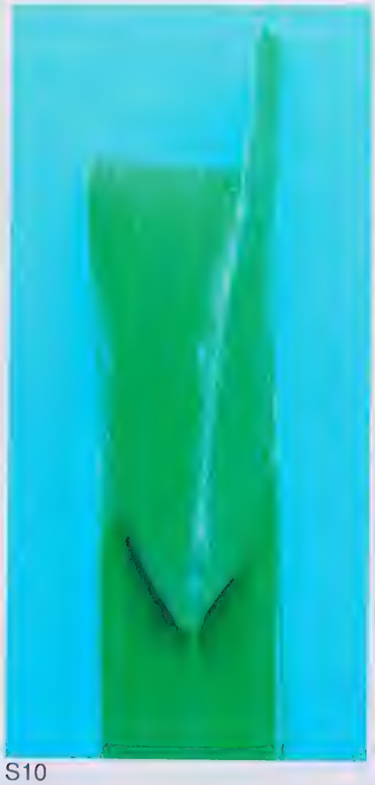
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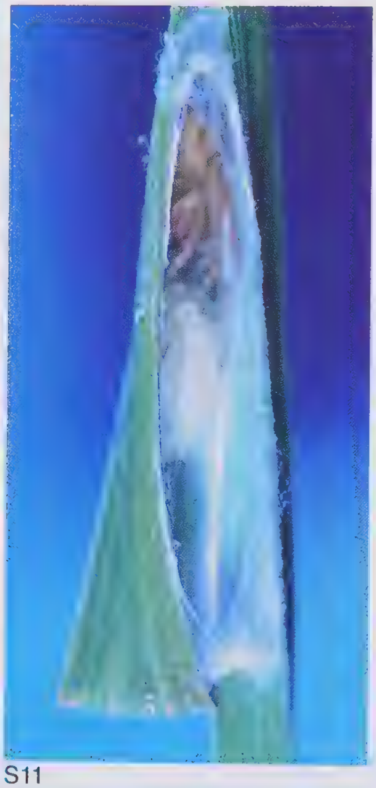
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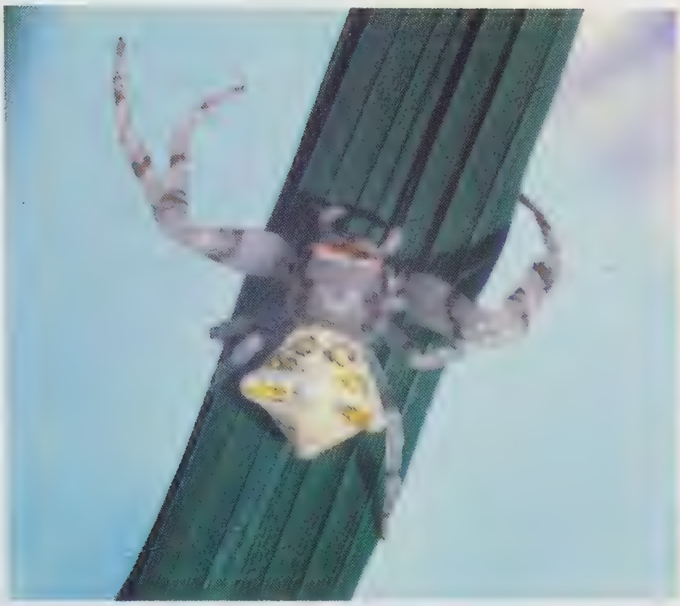
Plate II

S7	*Clubiona japonicola* (Boesenberg and Strand), female with globose abdomen.
S8	*C. japonicola* female with elongate abdomen.
S9	*C. japonicola*, male.
S10	*C. japonicola* nest.
S11	*C. japonicola* female inside the nest guarding the eggs.



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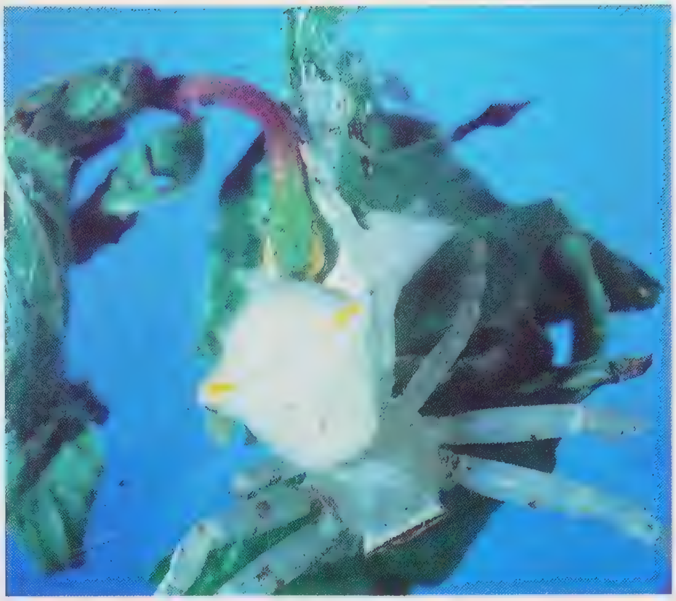

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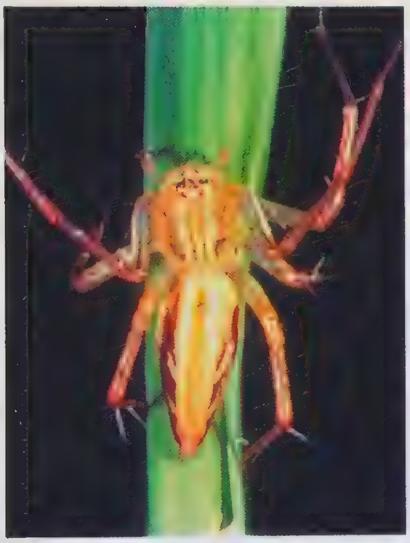

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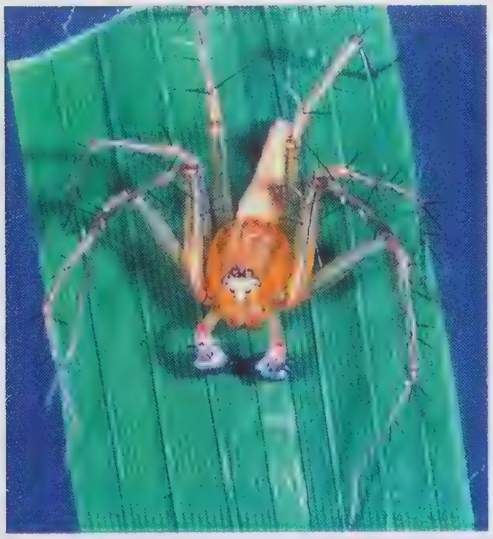

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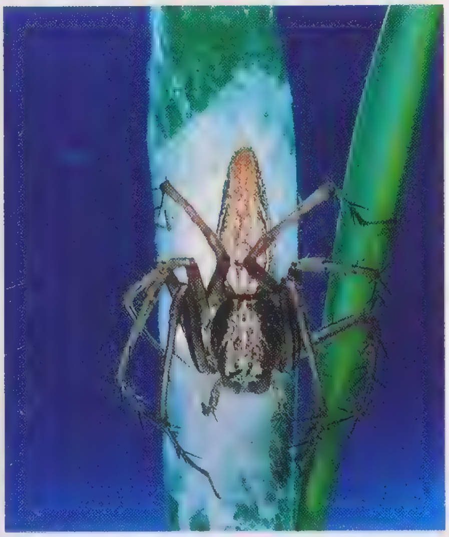

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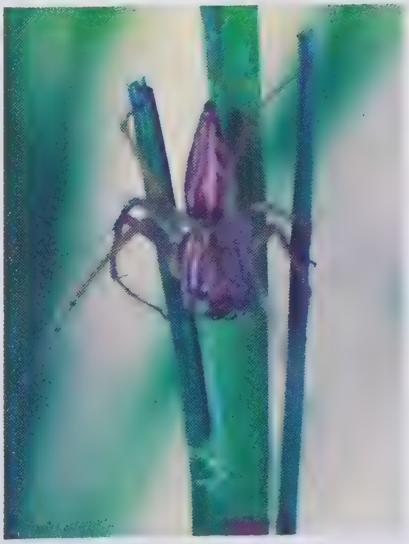

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Plate III

S12 *Thomisus okinawensis* Strand, female with spots.

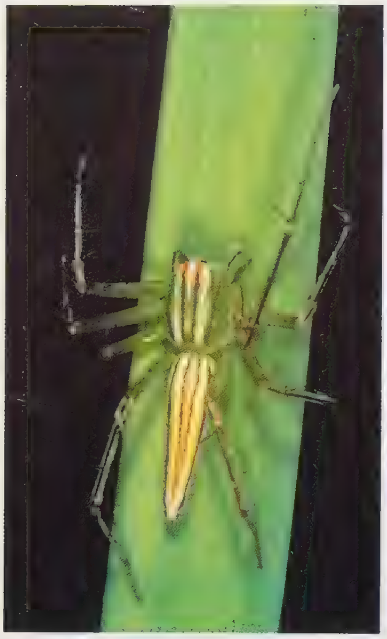
S13 *T. okinawensis* Strand, female without spots.

S14 *Oxyopes javanus* Thorell, female.

S15 *O. javanus* Thorell, male.

S16 *O. javanus* female on her egg cocoon.

S17 *O. javanus* female feeding on a brown planthopper nymph, *Nilaparvata lugens* (Stål).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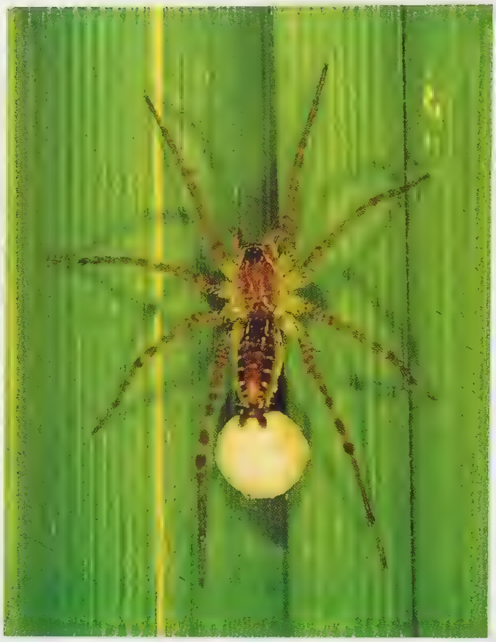
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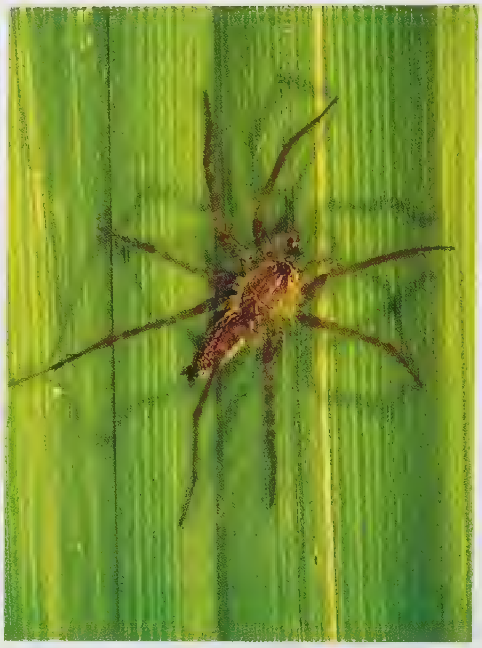
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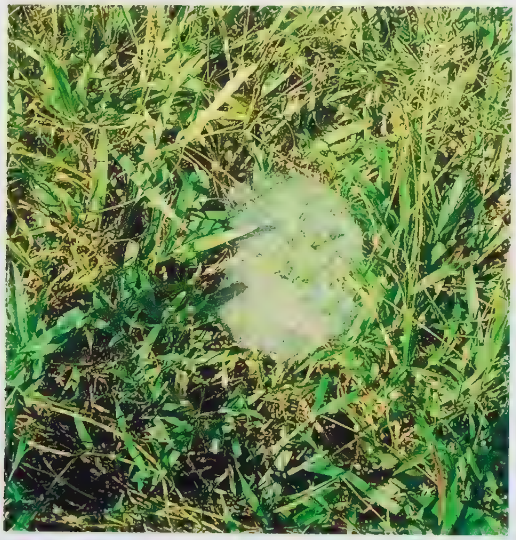
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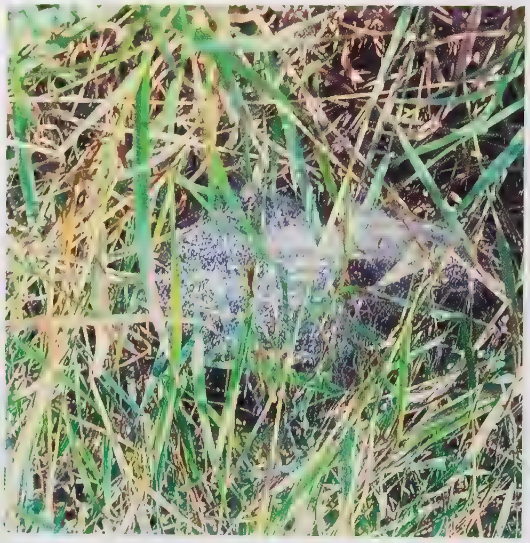
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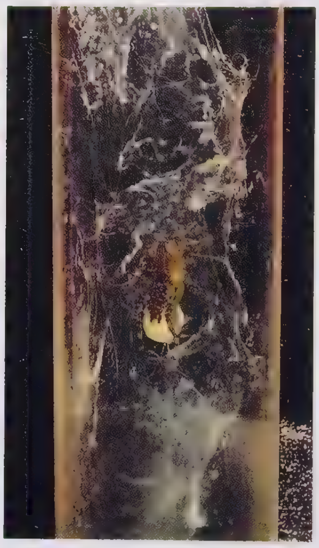
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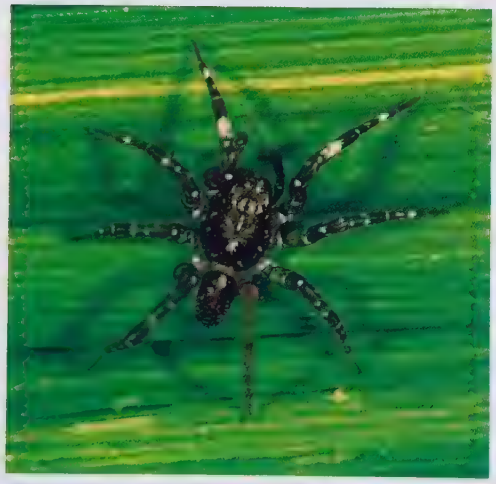
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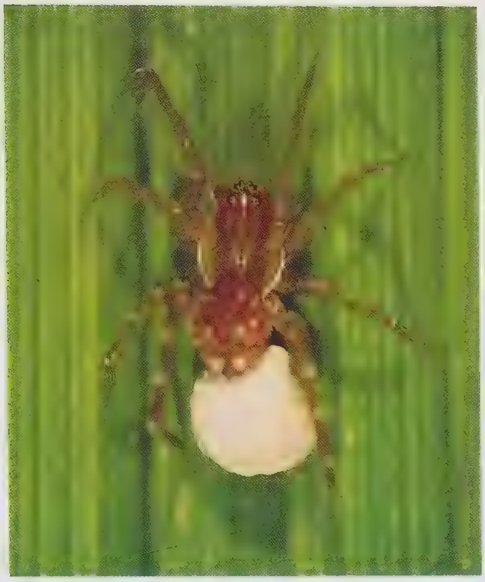
Plate IV

S18 *Oxyopes lineatipes* (C.L. Koch), female.
S19 *Hippasa holmerae* Thorell, female with egg cocoon.
S20 *H. holmerae* Thorell, male.
S21 Web of *H. holmerae* built on top of grasses close to the ground.
S22 Web of *H. holmerae* on grass stems above the ground.
S23 *H. holmerae* female with egg cocoon inside the web.
S24 *Arctosa tanakai* n. sp., male.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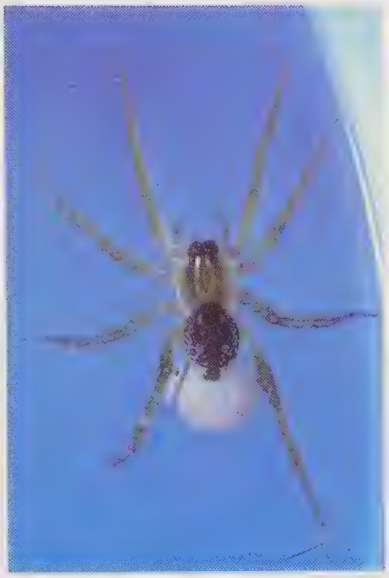
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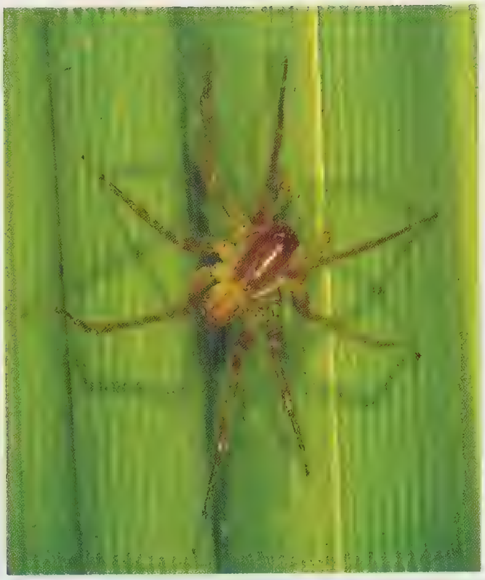
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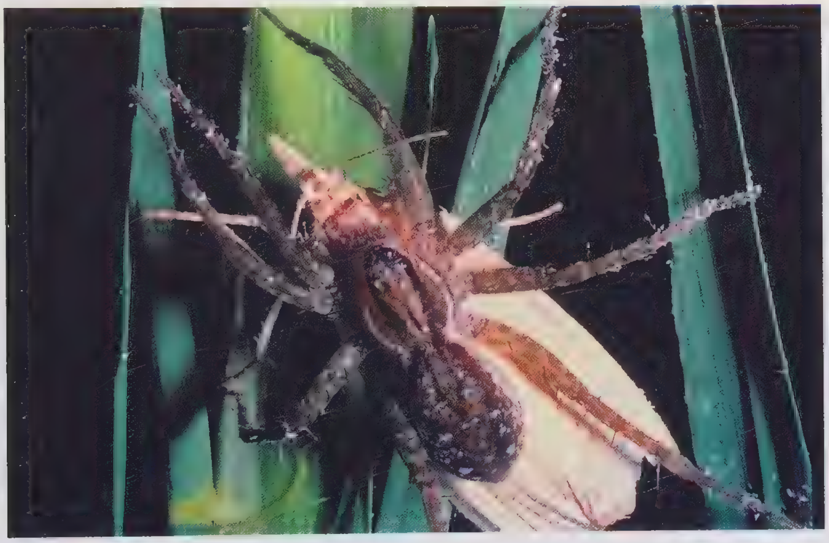
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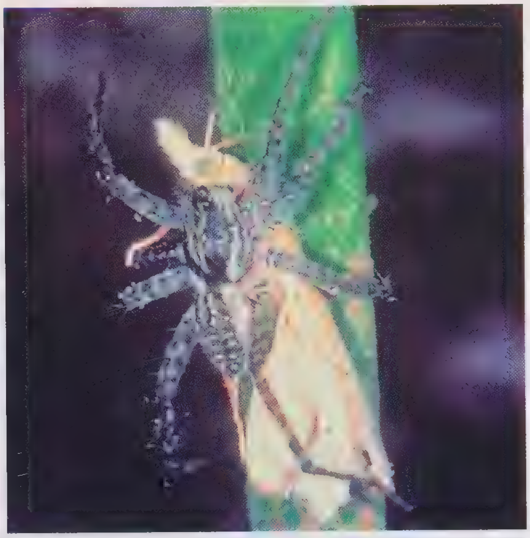
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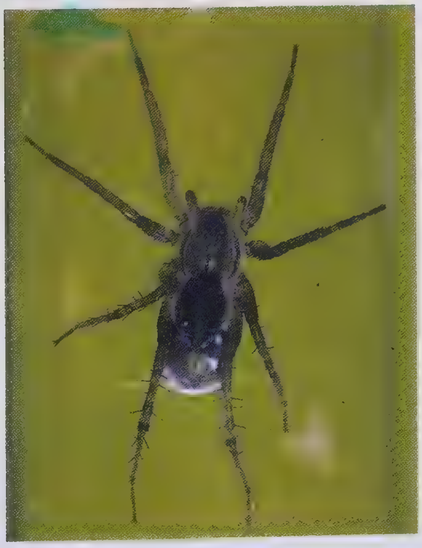
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Plate V

S25 *Pirata luzonensis* n. sp., old female with egg cocoon.

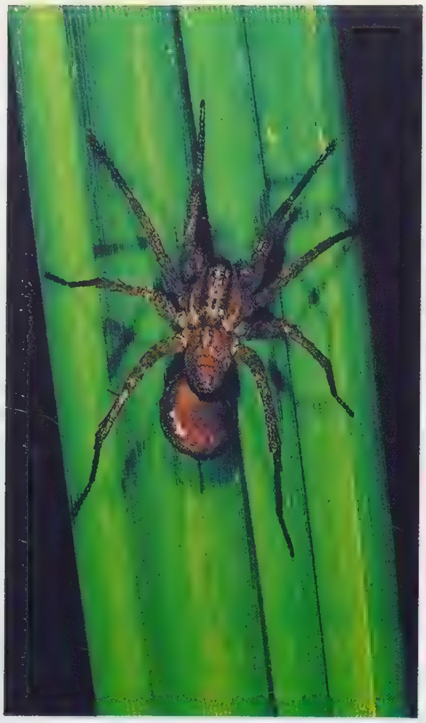
S26 *P. luzonensis* n. sp., young female with egg cocoon.

S27 *P. luzonensis* n. sp., male.

S28 *Pardosa pseudoannulata* (Boesenberg and Strand), light-colored female preying on striped stem borer moth, *Chilo suppressalis* (Walker).

S29 *P. pseudoannulata* (Boesenberg and Strand), dark-colored female preying on moth.

S30 *P. pseudoannulata* (Boesenberg and Strand), female with egg cocoon.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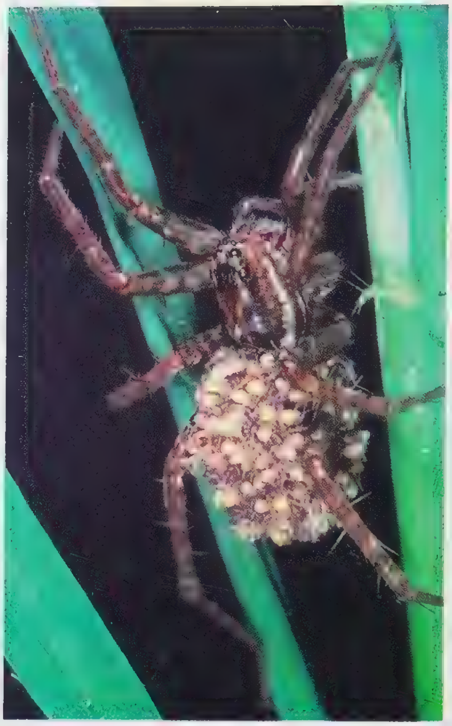
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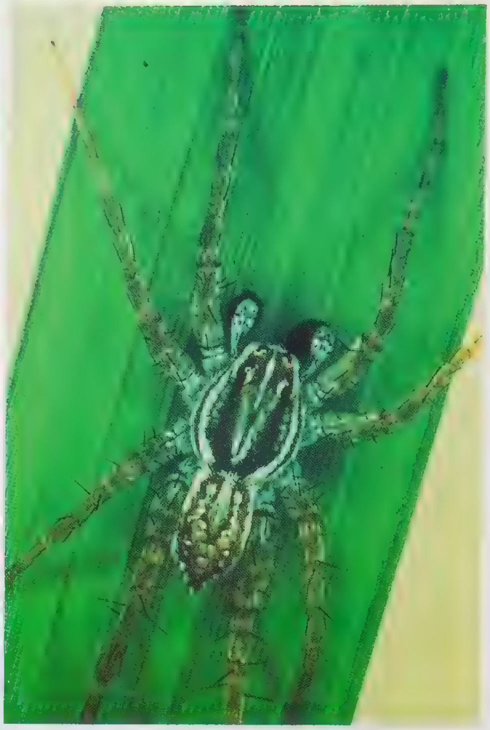
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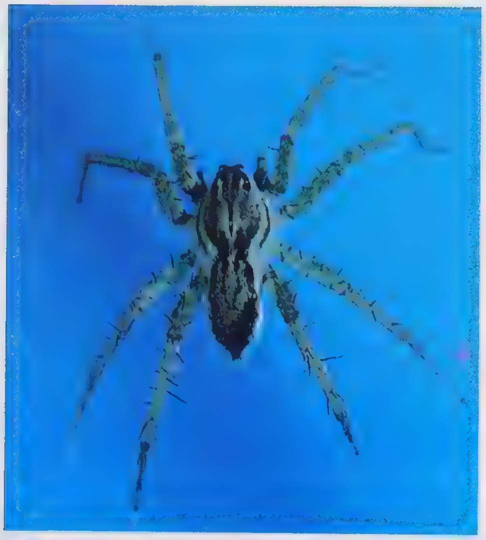
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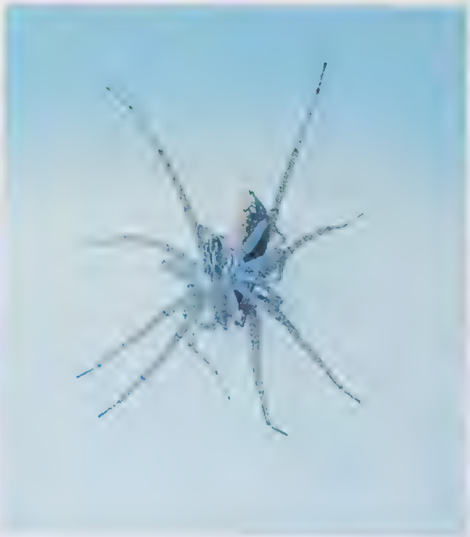
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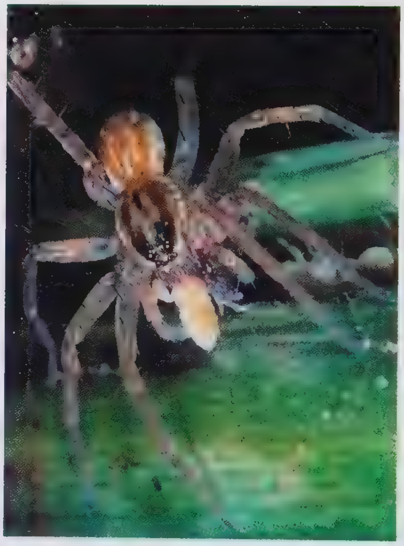
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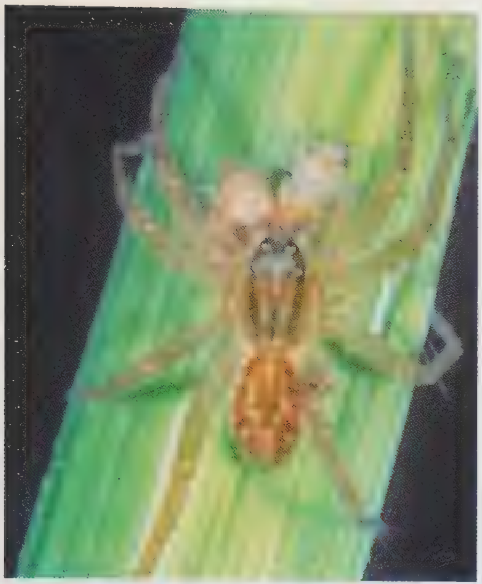
Plate VI

S31 *Pardosa pseudoannulata* (Boesenberg and Strand), female with ready-to-hatch eggs inside cocoon.
S32 *P. pseudoannulata* (Boesenberg and Strand), female with spiderlings on her back.
S33 *P. pseudoannulata* (Boesenberg and Strand), male.
S34 Posture of male *P. pseudoannulata* (Boesenberg and Strand) prior to mating.
S35 Mating pair of *P. pseudoannulata* (Boesenberg and Strand).
S36 Spiderling of *P. pseudoannulata* feeding on a single prey.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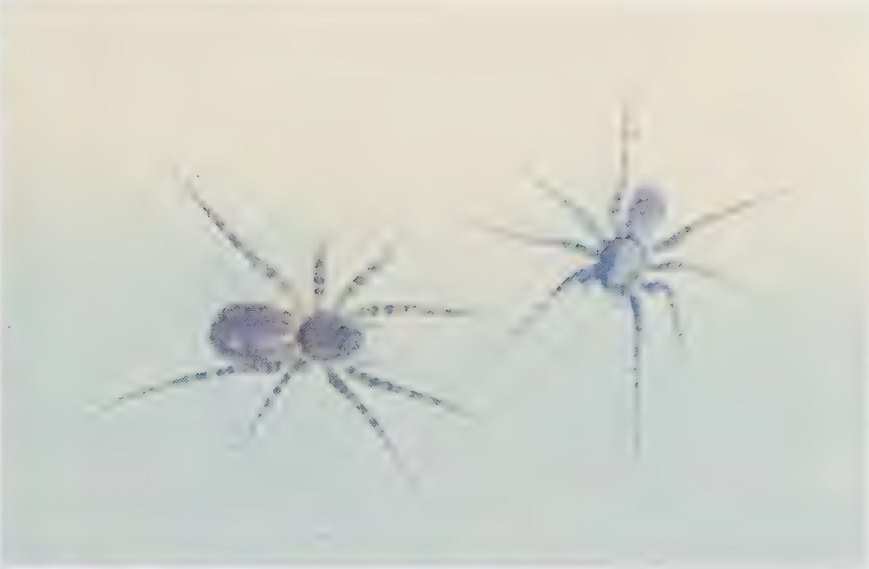
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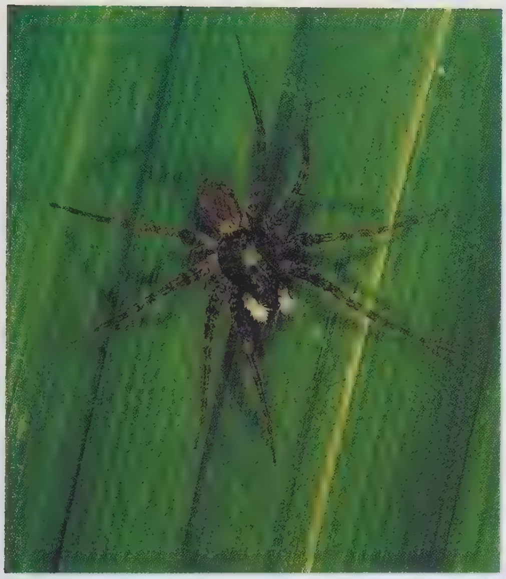
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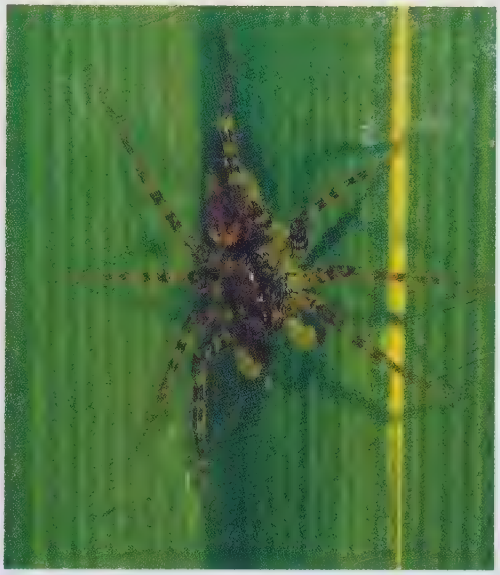
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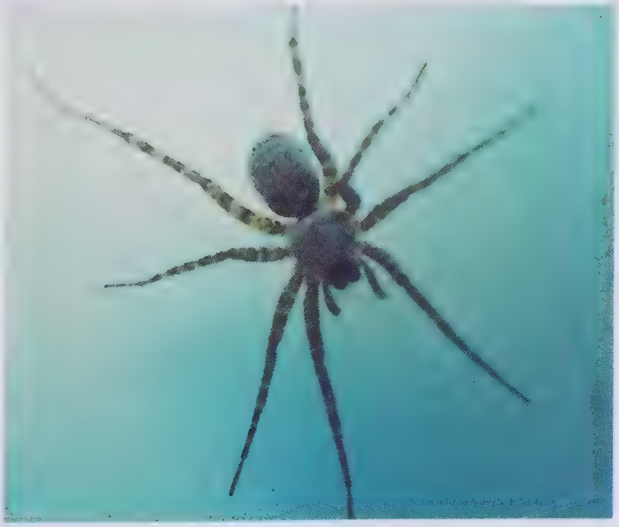
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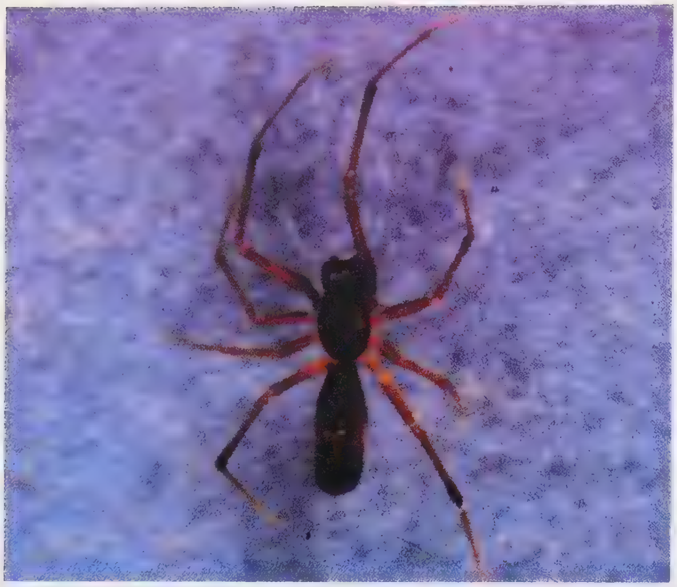
Plate VII

S37 Spiderling of *Pardosa pseudoannulata* (Boesenberg and Strand) showing voracity in feeding by stalking two preys.
S38 Pair of *Pardosa birmanica* Simon at courtship behavior.
S39 *P. birmanica* Simon, young adult male.
S40 *P. birmanica* Simon, old adult male.
S41 *P. birmanica* Simon, female.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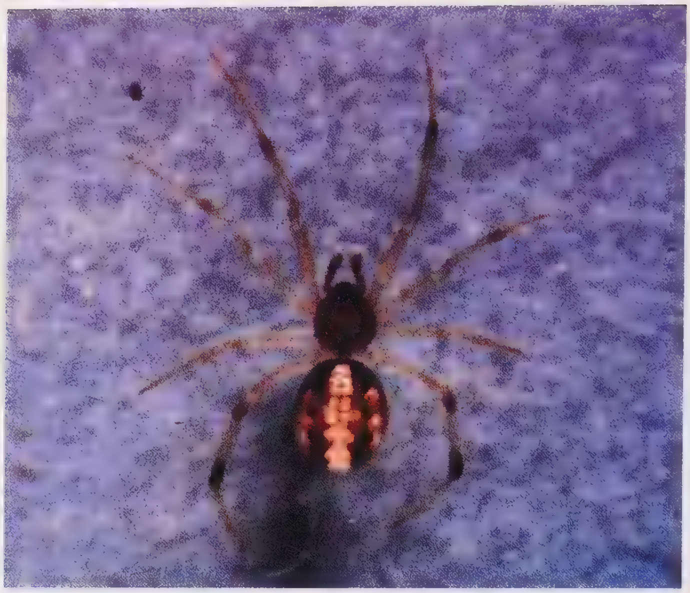
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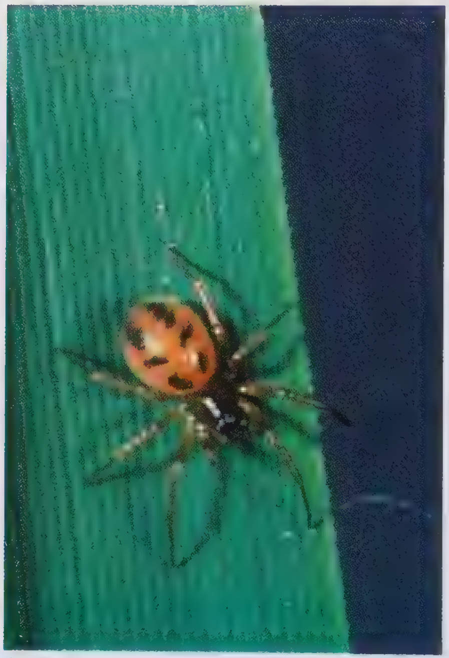
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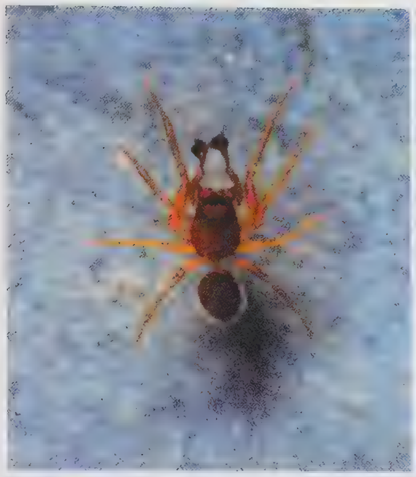
Plate VIII

S42 *Coleosoma blandum* Cambridge, male.
S43 *Theridion ischagosum* n. sp., female.
S44 Egg cocoon of *Atypena adelinae* n. sp., on a dry leaf.
S45 Egg cocoon of *A. adelinae* n. sp., on a green leaf.
S46 *A. adelinae* n. sp., female.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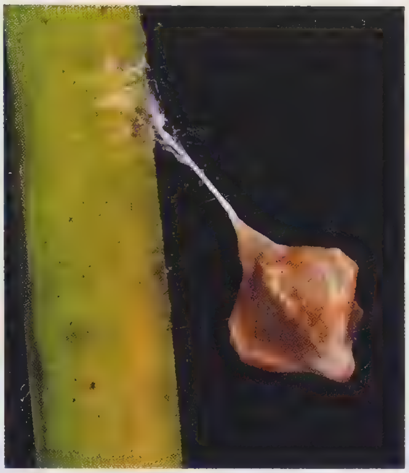
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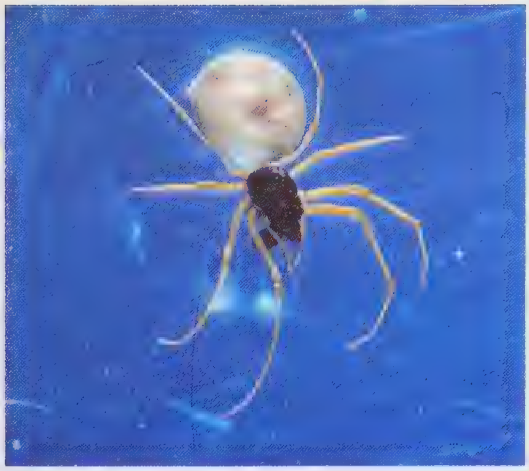
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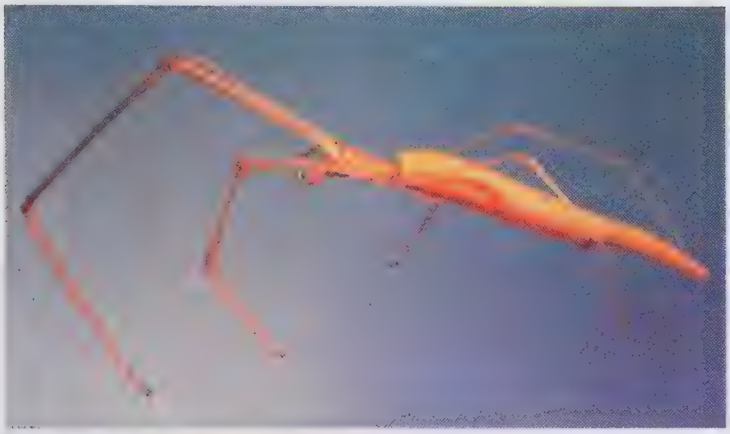
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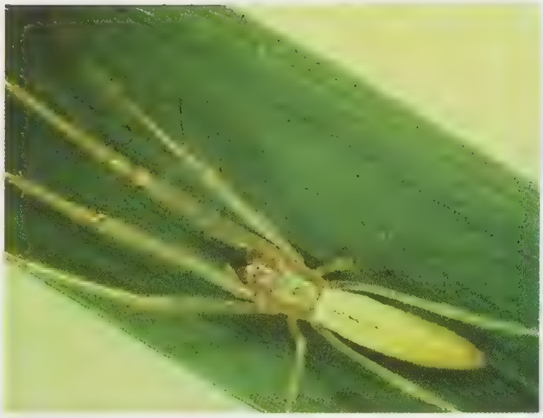
Plate IX

S47 *Erigone bifurca* Locket, male.
S48 Egg cocoon of *Wendilgarda liliwensis* n. sp.
S49 *Dyschiriognatha hawigtenera* n. sp., female.
S50 *Tetragnatha javana* (Thorell), female in lateral view showing the locations of spinnerets.
S51 *T. javana* (Thorell), female on a leaf.
S52 Mating pair of *T. javana* (Thorell).



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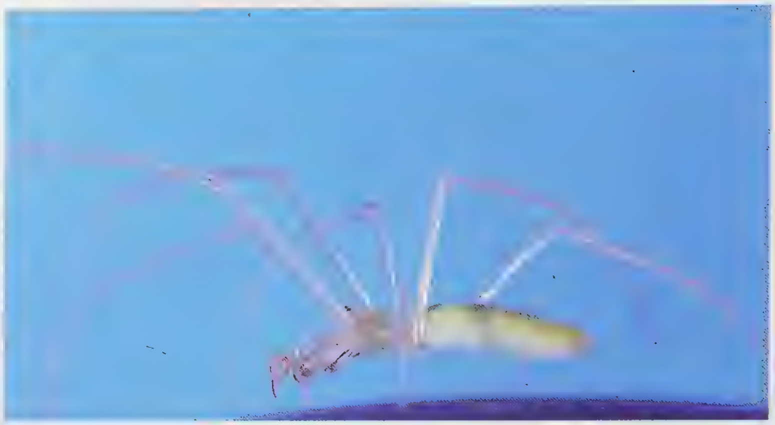

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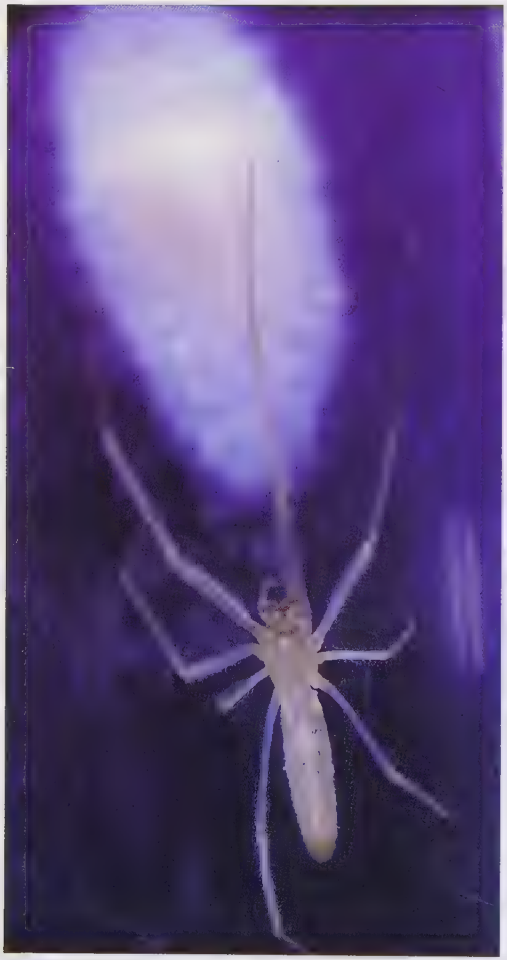

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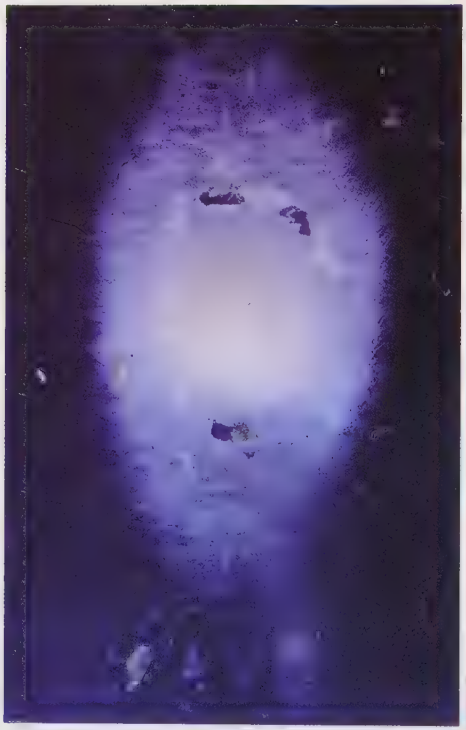

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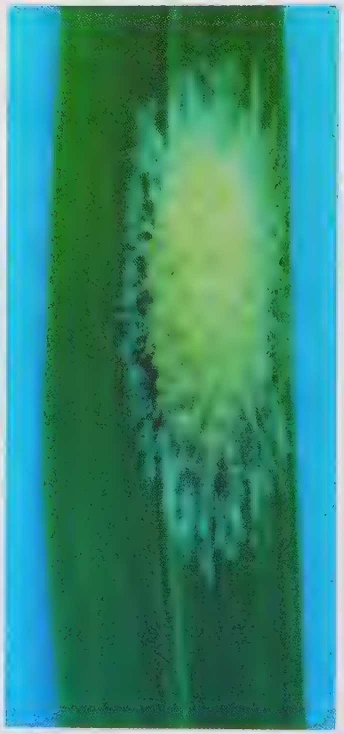
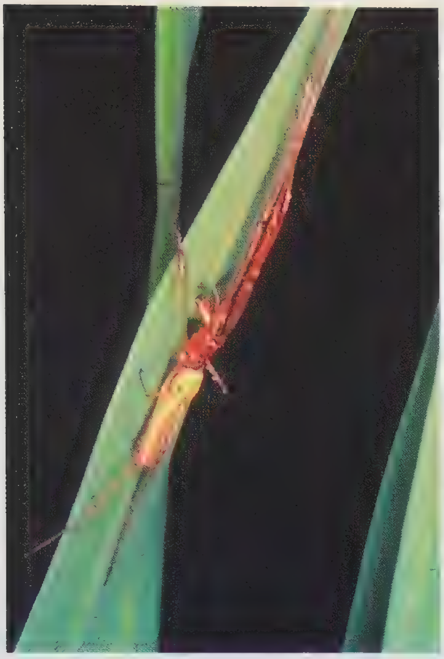


S57

Plate X

S53 *Tetragnatha virescens* Okuma, female.
S54 *T. virescens* Okuma, male.
S55 *T. vermiformis* Emerton, female approaching her egg cocoon.
S56 Egg cocoon of *T. vermiformis* showing exit holes of ichneumonid wasps parasitizing spider eggs.
S57 Egg cocoon of *T. virescens* Okuma.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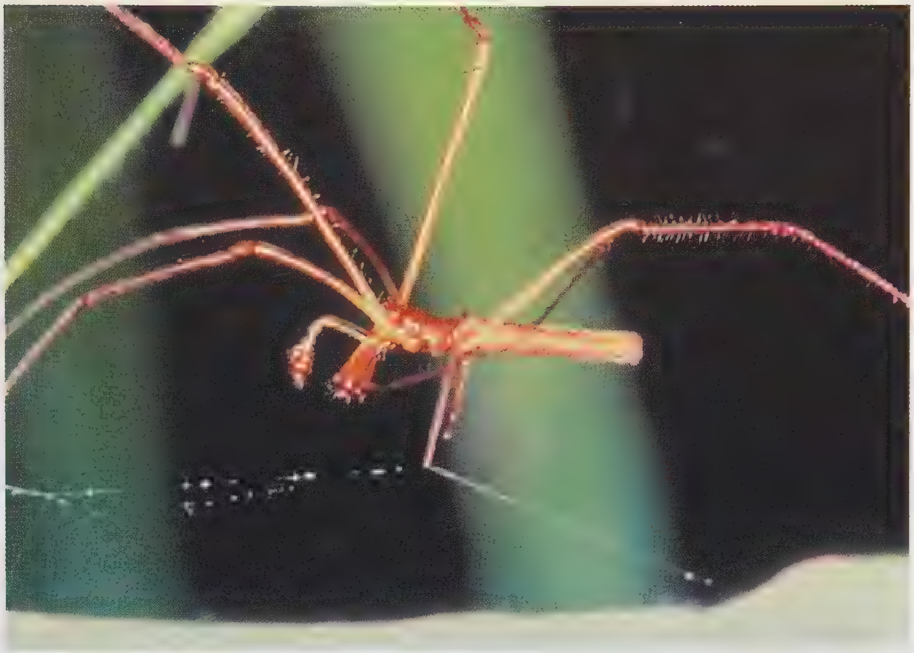
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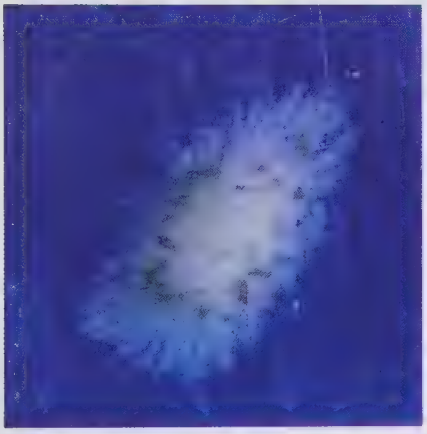
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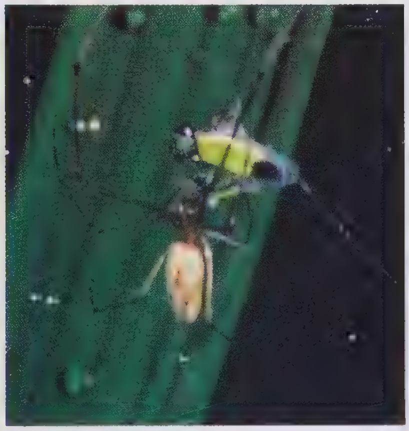
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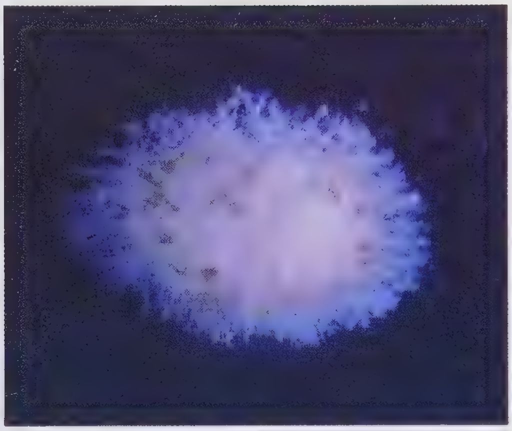
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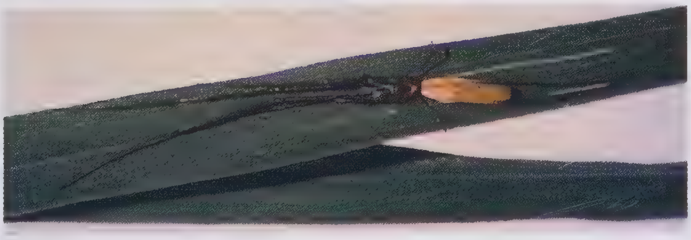
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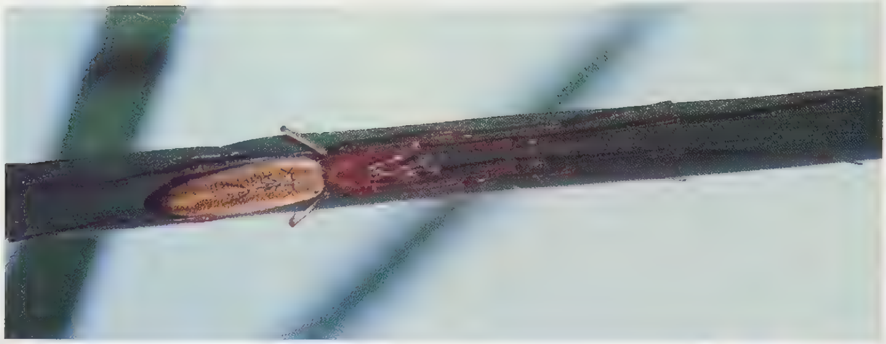
Plate XI

S58 *Tetragnatha maxillosa* Thorell, female.
S59 *T. maxillosa* Thorell, male.
S60 *T. maxillosa* Thorell, egg cocoon.
S61 *T. maxillosa* Thorell, immature in its web with an adult green leafhopper.
S62 *T. mandibulata* Walckenaer, egg cocoon.
S63 *T. mandibulata* Walckenaer, female.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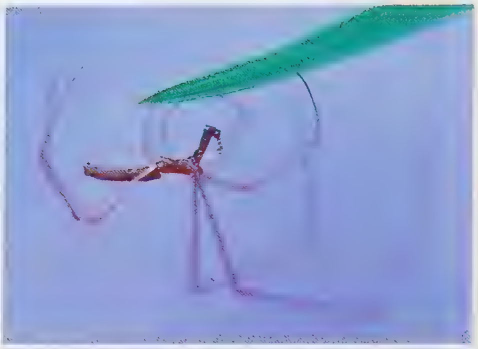
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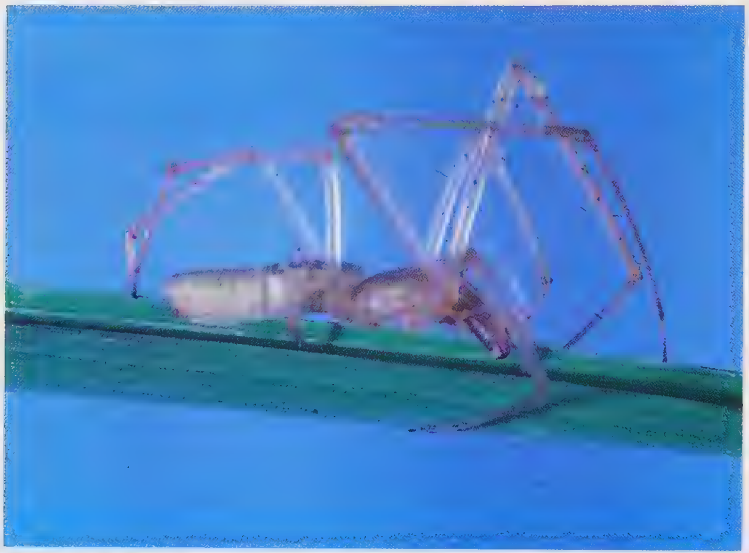
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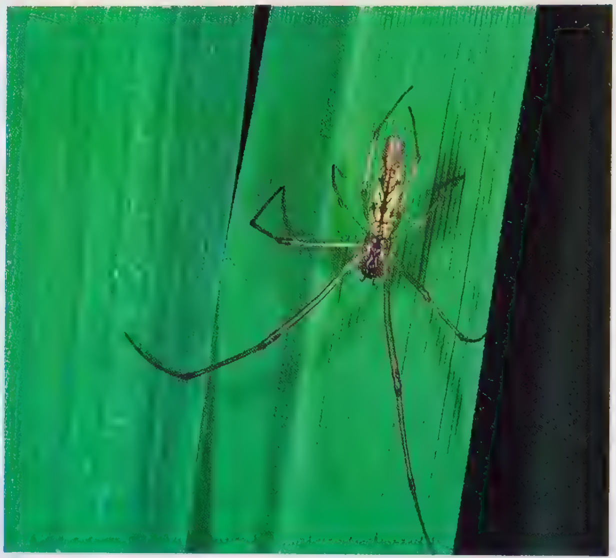
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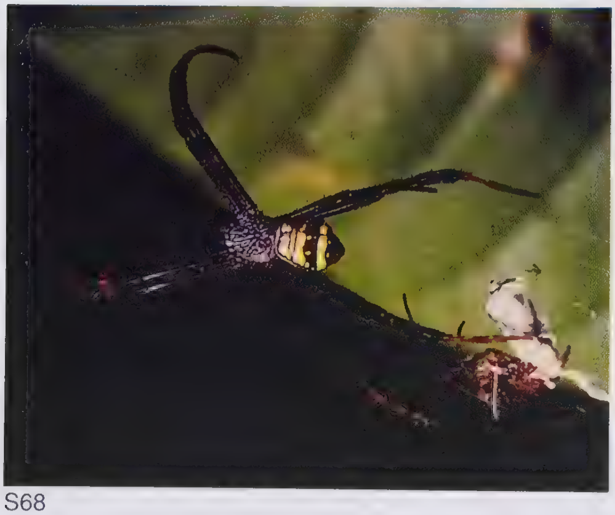
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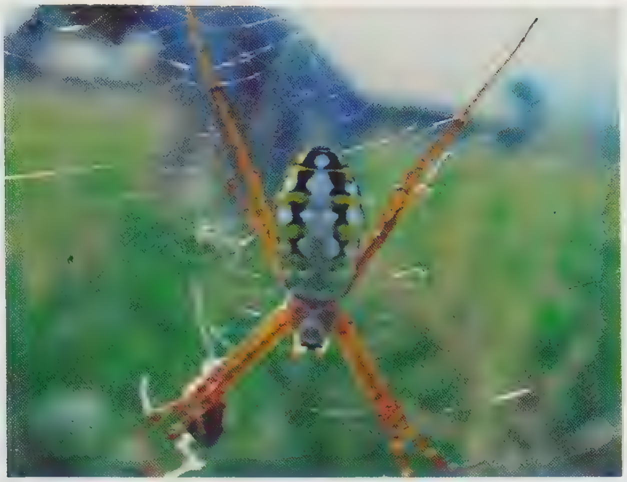
Plate XII

S64 *Tetragnatha nitens* (Auduoin), female.
S65 *T. nitens* (Auduoin), male.
S66 Immature of *T. nitens* (Auduoin).
S67 *Leucauge decorata* (Blackwall), rarely seen on a leaf.
S68 *Argiope luzona* (Walckenaer), newly molted female.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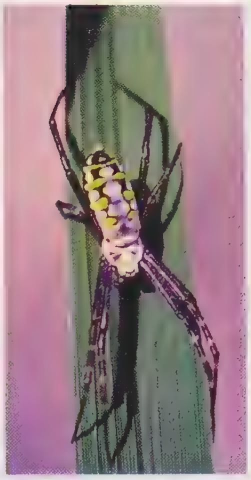
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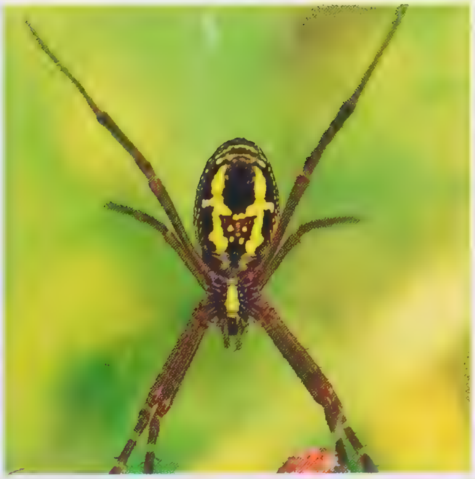
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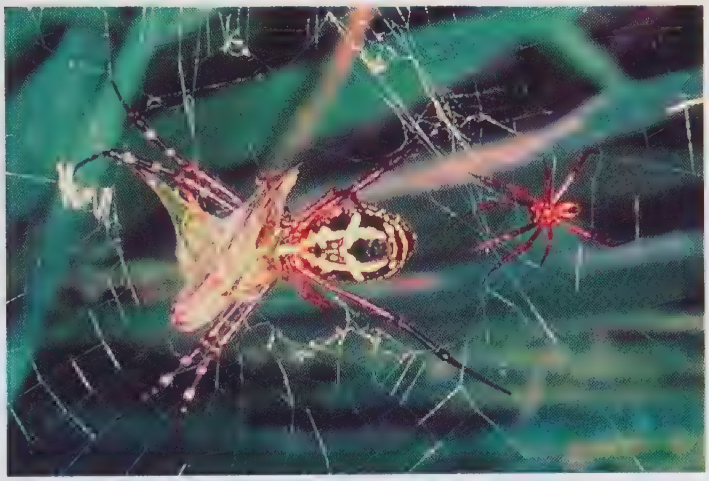
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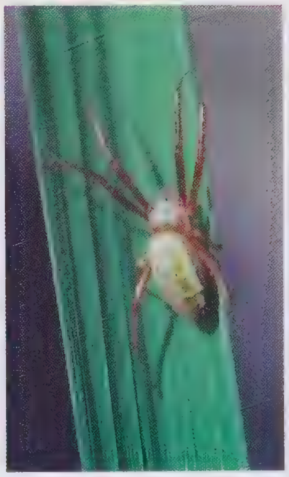
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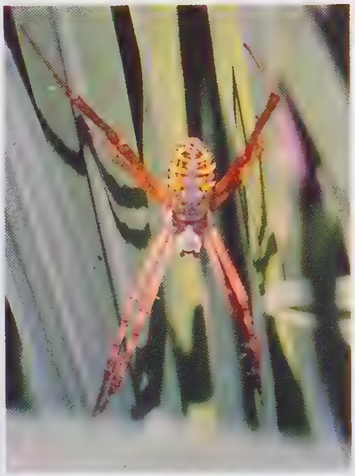
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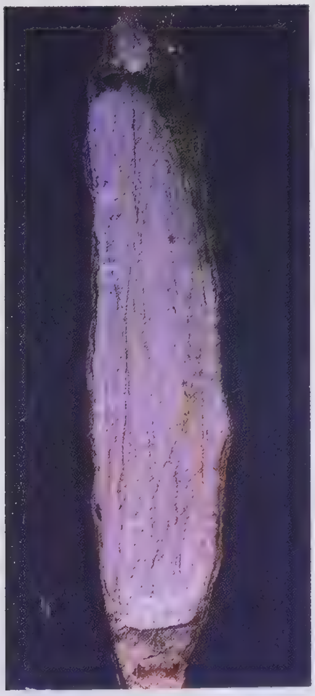
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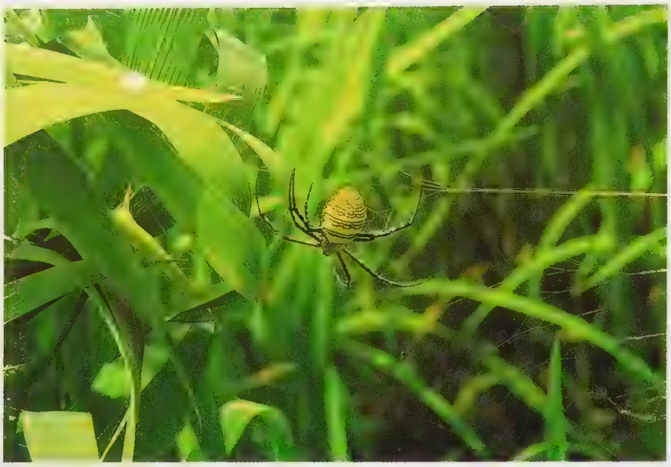
Plate XIII

S69 *Argiope catenulata* (Doleschall), female with yellow-brown legs.
S70 *A. catenulata* (Doleschall), female with black legs.
S71 *A. catenulata* (Doleschall), female venter showing yellow bands in the sternum and abdomen.
S72 *A. catenulata* (Doleschall), female (left) wrapping a small grasshopper, *Oxya hyla intricata* Stål, with silk and the small male (right).
S73 and S74 Immatures of *A. catenulata* (Doleschall), a younger one on a leaf (S73) and an older one near the canopy starting to build a web (S74).
S75 *A. catenulata* (Doleschall), egg cocoon.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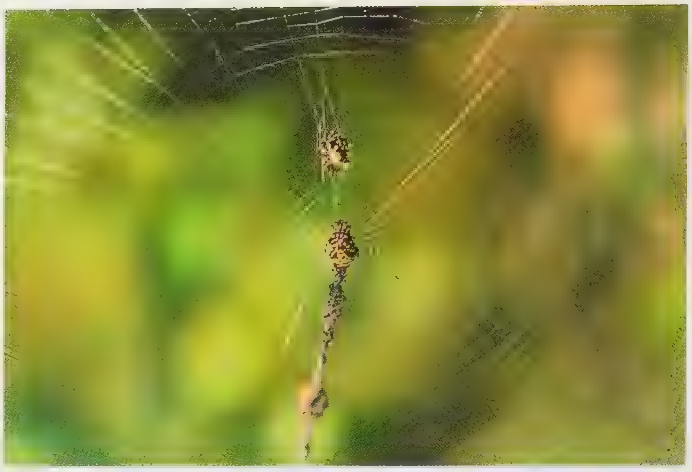
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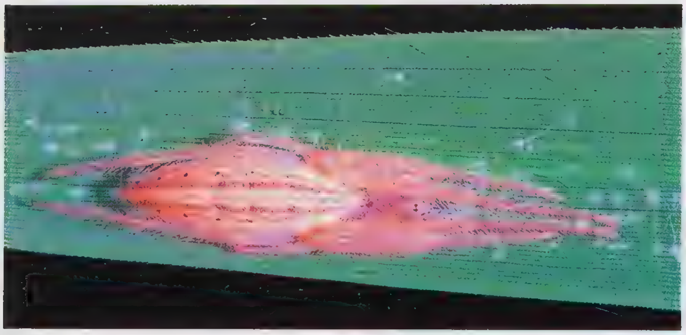
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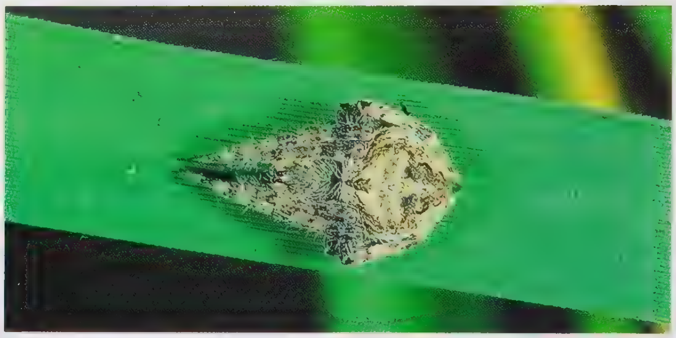
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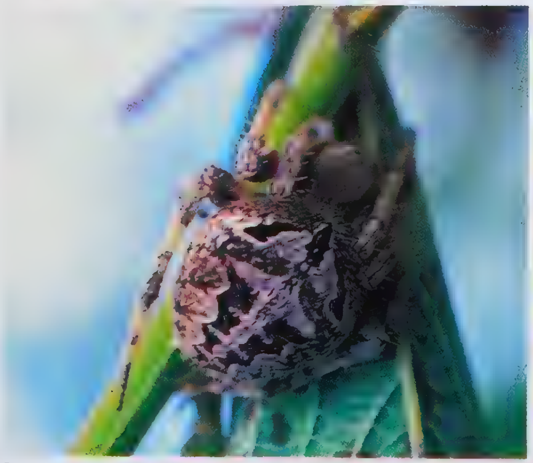
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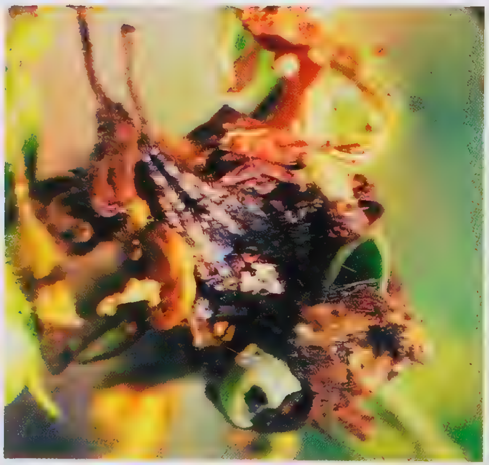
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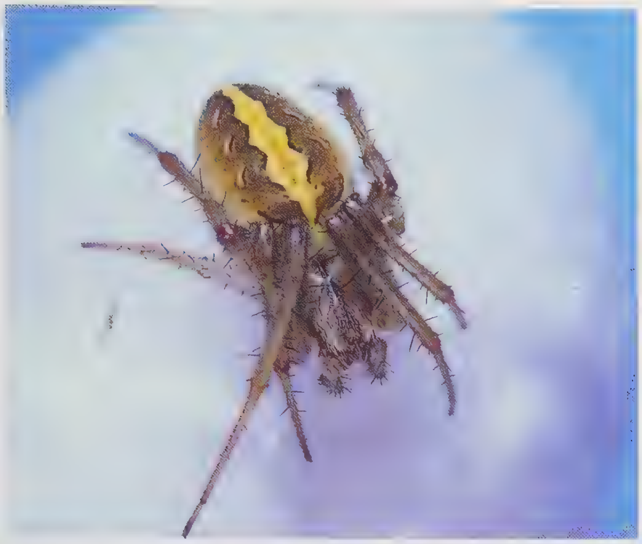
Plate XIV

S76 *Argiope aemula* (Walckenaer), immature.
S77 *Cyclosa mulmeinensis* (Thorell), female in her web.
S78 *Larinia phthisica* (C.L. Koch), female.
S79 *Neoscona nautica* (L. Koch), light form female on a rice leaf.
S80 *N. nautica* (L. Koch), dark form on a pigeonpea stem.
S81 *N. nautica* (L. Koch), female inside her retreat chamber.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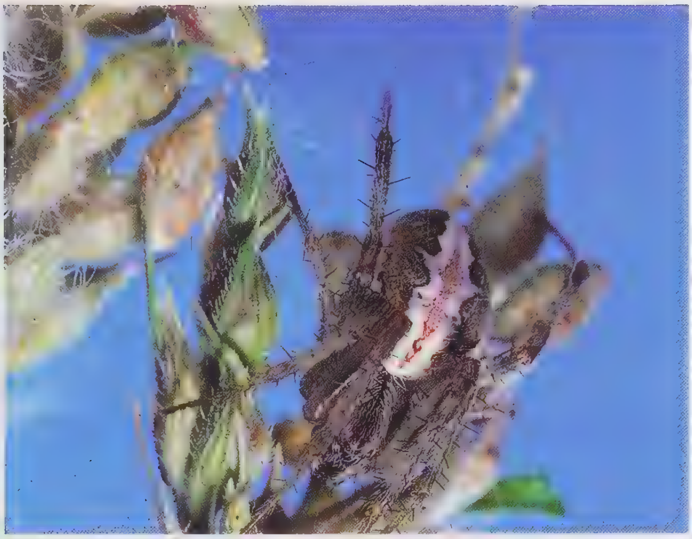
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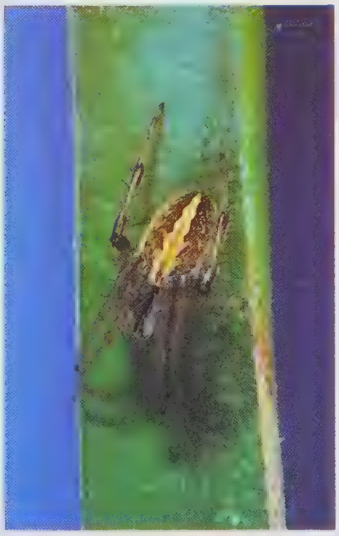
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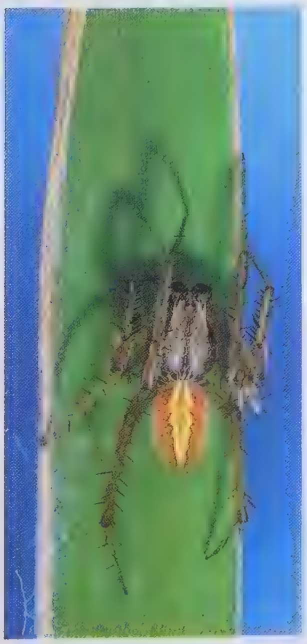
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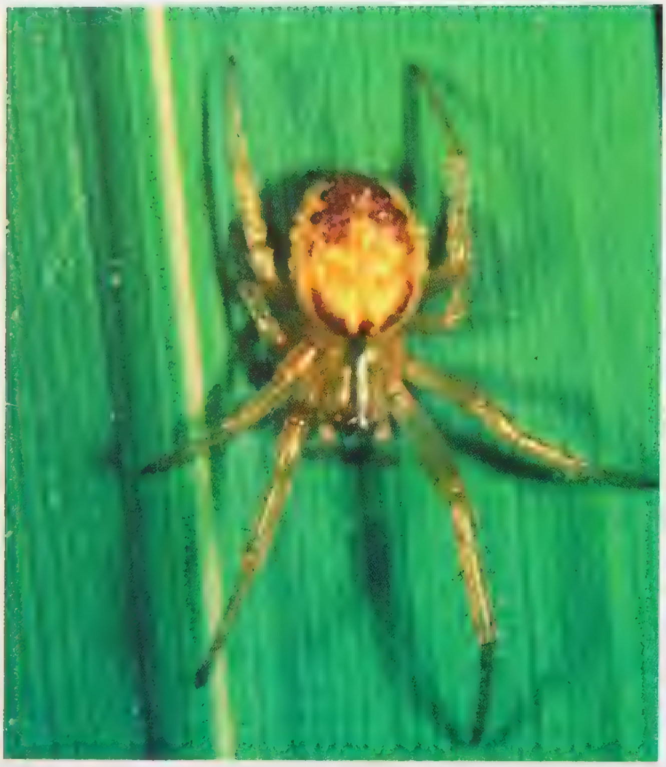
Plate XV

S82 *Neoscona theisi* (Walckenaer), female sitting on a cotton wad.
S83 *N. theisi* (Walckenaer), female preparing to lay eggs on weed inflorescence.
S84 *N. theisi* (Walckenaer), eggs being wrapped with silk.
S85 *N. theisi* (Walckenaer), egg cocoon glued on weed inflorescence.
S86 *N. theisi* (Walckenaer), female making a retreat chamber.
S87 *N. theisi* (Walckenaer), male.



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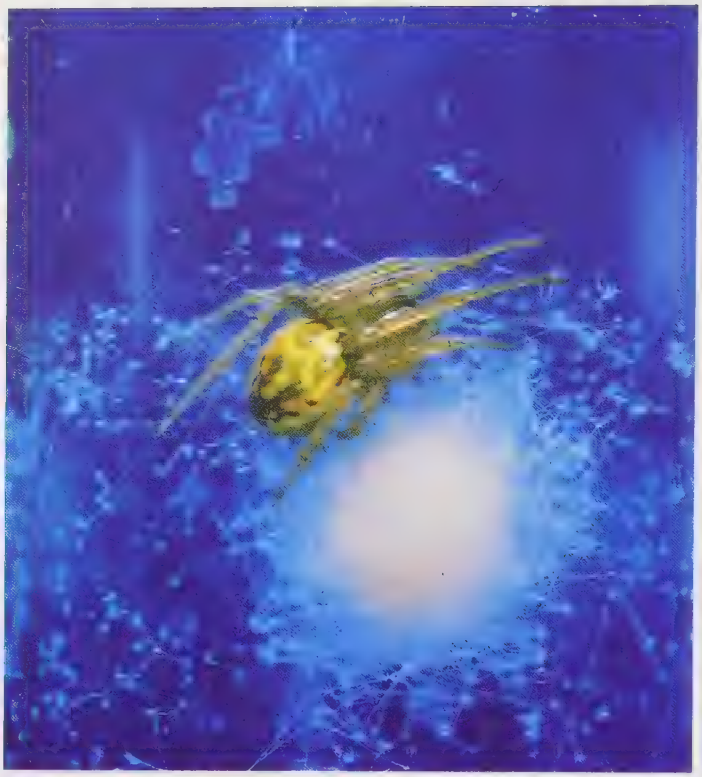

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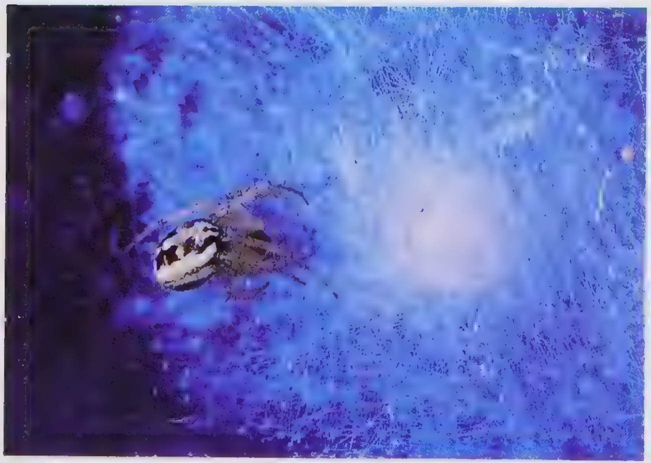

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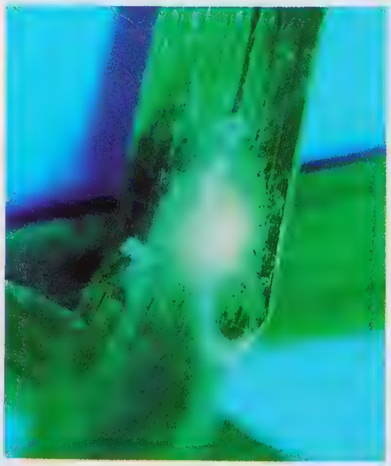

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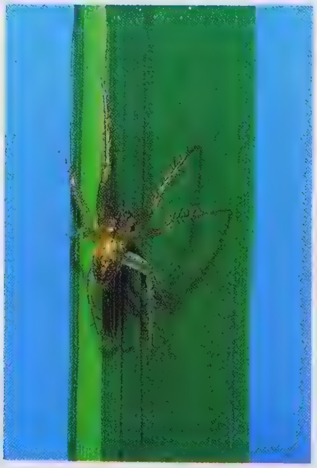

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Plate XVI

S88 *Araneus inustus* (C.L. Koch), female
S89 *A. inustus* (C.L. Koch), light-colored female on her egg cocoon.
S90 *A. inustus* (C.L. Koch), dark-colored female on her egg cocoon.
S91 *A. inustus* (C.L. Koch), egg cocoon exposed from a folded leaf.
S92 *A. inustus* (C.L. Koch), male.

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RICELAND SPIDERS OF SOUTH AND SOUTHEAST ASIA

A.T. Barrion and J.A. Litsinger, Entomology Division, International Rice Research Institute, the Philippines

Spiders are among the most omnipresent and numerous predators in both agricultural and natural ecosystems, and without them insect pest populations would become out of control. Their potential as biological control agents can only be appreciated through a greater understanding of their abundance and species composition in different ecological systems. There is therefore a great need for literature providing guidance on spider identification.

The spider fauna of several cultivated crops, in a number of regions of the world, has been well documented. There have been some previous attempts to record the spider fauna of rice in South and Southeast Asia, but these are scattered in the journal literature. This volume provides a comprehensive illustrated guide that can be used by specialists and novices to identify these spiders. The majority of the species covered were collected from a diversity of habitats in the Philippines. The bulk of the book consists of keys to the identification of families, genera and species of Philippine spiders, illustrated by more than 1000 line drawings and 92 colour photographs. A total of 341 species belonging to 134 genera within 26 families are recognized. Of these, 257 species and eight genera are new to science. Distribution maps for individual species and a classification scheme for Philippine riceland spiders are also provided. Overall, the work represents a major contribution to the literature for those interested in spiders or more generally in biological control and crop protection.

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